American Aviation

JUNE 11, 1951 — 35c

THE INDUSTRY'S FIRST NEWS MAGAZINE

JUN 8 1951
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Kicked Around Again

HERE we go again, folks. It's World War II all over again when it comes to shoving the aircraft industry far down the line in production importance in government.

Know where aircraft is located in the National Production Authority?

by W. W. P.

In the line of authority is NPA Assistant Administrator H. B. McCoy who is *director of the Textile, Leather and Specialty Equipment Bureau.* (The italics are ours).

As chief of bureau Mr. McCoy "guides and coordinates" the activities of the following divisions:

Electronics, Communications Equipment, Consumers Durable Goods, Scientific and Technical Equipment, Service Equipment, Motion Picture Photographic Products, Ordnance and Shipbuilding, Textile, Leather and Leather Products, Salvage and Reclamation, and Aircraft.

And Aircraft!

That's exactly the way the official announcement reads. Aircraft comes last. It comes under the Textile, Leather and Specialty Equipment Bureau. Just a miscellaneous specialty! Long live leather and textiles!

It's an old, old story, of lip service being given to the importance of air power in Congress and topside government, and failure to follow through down below.

It's like the beginning of World War II when aircraft priorities were so far down the scale that some assembly lines were within a few days of having to close down. It was *American Aviation Daily* that exposed and blasted this situation and obtained an upgrading of material priorities within 48 hours after publication.

It is very clear to everybody in the aircraft industry that unless there is a re-establishment of an Aircraft Production Board, like that of World War II, this nation is not going to get the output of aircraft it needs in the present mobilization program. The job of production could not have been accomplished in the last war without such a set-up. It can't be done today and tomorrow by shoving aircraft under textiles and leather. It is ludicrous to an extreme.

The record of the old Aircraft War Produc-

(*Please Turn to Page 6*)

Eastern's V. P.-Engineering

Charles Froesch, for the past 16 years chief engineer with Eastern Air Lines, has been elected vice-president in charge of engineering. Under his immediate jurisdiction is the engineering and design entailed in introducing EAL's $75 million fleet of Super Constellations and Martin 4-0-4's later this year. Froesch is chairman of the ATA Airport development committee and a member of the operating committee of the National Advisory Committee for Aeronautics.

In This Issue

Billion-Dollar Backlogs—*Industry Total Increases 340% in Two Years* 11

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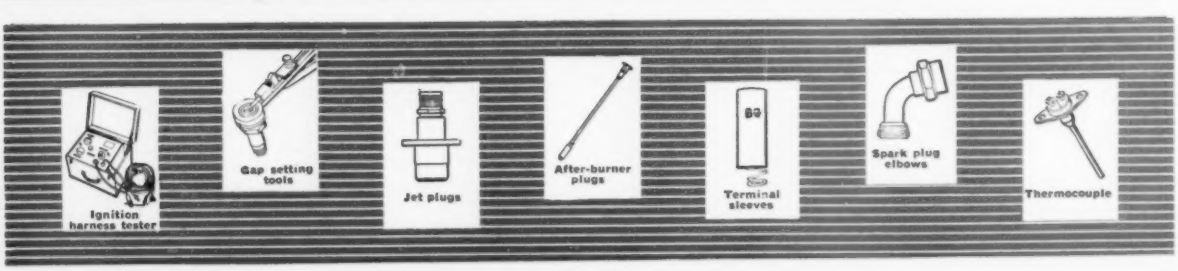

American Aviation

THE INDUSTRY'S FIRST NEWS MAGAZINE

NEWS SECTION

Volume 15 Number 2

June 11, 1951

a LOOK at the WEEK

Question of who's going to pay for modifying four-engined airline planes, so they'll be available for military service if needed, has been put up to Air Force and Navy. Modification, urged by civil aviation mobilization task group, is expected to start when question is answered. Answer will throw interesting light on whether AF and Navy consider their transport "unified" through MATS, or whether they both want airline planes in event of war.

•

More changes in defense agencies are rumored, but there's nothing definite yet. One report has Defense Production Administration and National Production Authority merging; another has shift of power from DPA to NPA, with former cut down considerably.

•

Formal announcement of Aircraft Production Board, which has been functioning informally for several weeks, is said to be held up awaiting selection of permanent chairman. Meanwhile there's no indication of exactly what APB's powers will be.

•

Payrolls of aircraft companies are finally nearing those of last war. Douglas had recent weekly figure of $5.8 million against $3.9 million a year ago.

•

Personnel shortages in aircraft industry will prompt government to conduct campaign to convince skilled workers that they're needed in plane production.

•

Manufacturers of aviation ground lighting equipment have told NPA they can't get enough steel to meet military and civil requirements.

•

Budget Bureau is cool toward proposal to amend prototype testing law to allow $8 million for design and construction of local service airplane. Measure may not get through this Congress.

•

If Congress okays funds for testing of planes next fiscal year under prototype bill, chances are the amount won't be large enough to include helicopters. It'll be about half of what was asked.

•

Air parcel post business, expected to drop after last November's substantial rate increase, slumped only temporarily and has now boomed considerably ahead of last year.

Civil Plane Materials Cut 20%

A 20% cut has been made in materials requested for transport and personal plane production in third quarter of 1951 under Controlled Materials Plan.

However, it remains to be seen how the cut will affect actual production. Airlines and manufacturers say they aren't too worried.

Oddly enough, the cut marked first recognition of personal aircraft under CMP. Annual production of 2,500 planes a year had been urged by Air Coordinating Committee but had never cleared through Defense Production Administration. They weren't on any CMP list—not eligible for materials allocations.

Background: CAA's Office of Aviation Defense Requirements submitted its third quarter CMP estimates to DPA for commercial and personal planes. The latter, not being on any CMP list, were submitted as "commercial."

Program was cleared by DPA's important requirements committee, headed by Charles E. Wampler, Deputy Administrator. The 20% cutback was later made by DPA's program adjustment committee, under M. L. Anshen, on leave from Indiana University, where he is professor of marketing. It is said that cuts were necessary, as they were in other industries, because demands for metals exceed supplies.

Effect: Industry isn't unduly concerned because:

Materials allocations are in pounds, not numbers of planes. It may be possible, officials say, to use allocations to secure hard-to-get items, obtaining others without allocations.

Materials on hand may be used.

Substitute materials may be used.

First CMP estimates submitted may not be too accurate—they represent an "educated guess," and it may be that there's enough "slippage" in them to cover close to full production.

Cut could mean some delay in transport deliveries a year from now, but it's pointed out that delays are just as likely to be caused by other production problems. It's also believed that it may be possible to get more materials later.

A related problem has been how civil planes would be handled under CMP. Transports were put on "B" list; lightplanes are on same list but they're marked with an asterisk meaning they wouldn't be considered for materials. Industry wanted all materials handled with military planes on "A" list but NPA has refused to budge. Solution being talked is:

Transports: Will remain on "B" list but there'll be a single allocation symbol. Thus, although they'll go through NPA's aircraft division they'll be coordinated with military transports through Aircraft Production Resources Agency at Wright-Patterson AFB.

Personal Planes: Either asterisk will be removed, making them eligible for materials, or they'll continue to be classed as commercial. Officials admit that it's hard to separate business and pleasure buyers, but they express the opinion that almost all present use is business.

Gilpatric Heads AF Plane Procurement

Of importance to aircraft industry is top-level Air Force shuffle which makes Roswell L. Gilpatric the No. 1 AF policy man on plane procurement and related subjects.

Gilpatric, recently named Assistant Secretary, gets

a new title—Assistant Secretary-Materiel, and takes over most of duties formerly handled by Undersecretary John A. McCone. It's the first time AF has had such a title.

Here's what Gilpatric will handle: policies and general supervision of aircraft procurement and production, industrial mobilization, supply, transportation, maintenance, industrial security, command installation real estate, contract renegotiation, and contract appeals. McCone will concentrate on overall policy matters.

AF Names Five More Civil Schools

Five more civil flight schools have received Air Force contracts to train aviation cadets, bringing total to nine. No others are to be selected under present AF training program.

The five are: Texas Aviation Industries, San Antonio, starting a course at Hondo, Tex., on July 9; Anderson Air Activities, Milwaukee, opening at Malden, Mo., Aug. 21; Aviation Associates and Southern Airways, Atlanta, starting jointly at Bainbridge, Ga., Aug. 21; Darr Aero Tech, Chicago, starting Aug. 2 at Marana, Ariz., and Serv-Air Inc., Raleigh, N. C., starting Nov. 19 at Kinston, N. C.

Convair 340 Backlog Reaches 100

United Air Lines' order for 10 more Convair 340 twin-engined transports, and Northeast Airlines' order for four, brings consolidated Vultee's backlog for the plane to 100.

This is the break point in prices. Last 14 of first 100 were to sell for $535,000 each, including spares and equipment; after that, price will be $575,000. Price of first 86 was $520,000. Here are 340's ordered to date:

United Air Lines	40
Braniff Airways	20
Delta Air Lines	10
Continental Air Lines	7
Mid-Continent Air Lines	6
Hawaiian Airlines	6
Northeast Airlines	4
Aero O/Y (Finnish)	3
Arabian-American Oil Co.	2
Texas Co.	1
Pratt & Whitney Aircraft	1
Total	100

Court Blocks Non-Sked Rule

CAB's proposed regulation setting strict limits on frequencies of non-scheduled air carrier trips has been blocked by permanent injunction in Federal District Court, Washington, and CAB hasn't decided yet whether it will appeal. Its course of action will probably be determined by what Senate Small Business Committee reports from its investigation of the regulation.

Judge Walter M. Bastian, hearing arguments of Miami Airline and American Air Transport, ruled that non-skeds can only be put out of business after adjudicatory hearings. In absence of a numerical limitation on trips, CAB will have to rule on every non-sked case, determining whether each carrier has been flying too frequently.

Post Office Pays Big 4 at 42c Rate

Although there's been no final action on CAB's proposal to pay Big Four a flat 42c per ton-mile interim mail rate, the Post Office Dept. has already started using the reduced rate.

Advanced payments to American, United, TWA and Eastern for April reflected the new rate on a retroactive basis to Jan. 1, as proposed by CAB. For 1951's first quarter, it will mean a $1,000,000 pay reduction for the lines.

CAB, which hasn't yet been able to determine permanent Big Four rates, proposed the 42c interim figure to minimize necessity for recapture of excessive pay, assuming that it finds current rates to be too high. PO says it can start the 42c rate without final CAB action because it can pay airlines an "arbitrary percentage" of estimated compensation on a pre-audit basis. The percentage now being used works out at the 42c rate. Some of the airlines are objecting.

MANUFACTURERS

Chase Plant's Future: Future use of Chase Aircraft's West Trenton, N. J., plant is uncertain following decision to build company's C-123 assault transport at Kaiser-Frazer Corp.'s Willow Run plant (News Issue, June 4). There's a possibility that it may go out of aircraft production business and be taken over by Navy as part of new gas turbine lab now under construction adjacent to the plant. Air Force would only say that C-123 production engineering work would be handled at West Trenton and that beyond that its plans for the plant are indefinite.

New Westinghouse Plant: New plant for production of jet engine components will be built on outskirts of Columbus, O., by Westinghouse Electric Corp. It will have 1,900,000 sq. ft. of floor space, largest single plant yet built by company.

Beech Sold Out: All 1951 commercial production of the four-place Beech Bonanza has been allocated to distributors, and production of the Twin-Bonanza is sold out for the next year.

Champion Shuts Down: Champion Spark Plug Co. was closed week of May 27-June 2 and expected to be closed part of last week because of shortage of steel used in plug manufacture. Both auto and aircraft work stopped because senior men, working on former, would have required 60-90 days' training for aviation work. Champion has suggested changes in military plug specifications to conserve critical metals.

Piper Orders: The Army has ordered an undisclosed number of Piper L-18C and L-21 observation reconnaissance planes.

MRO Eased: Maintenance, repair and operation of manufacturing equipment is expected to be eased as result of National Production Authority amendment to Regulation 4 permitting manufacturers to spend as much as 20% more for supplies than they did last year. They'd previously been limited to same amount as in an average 1950 quarter. Amendment is to make up for 10% increase in prices in past year and to compensate for increased business activity.

People: **Turner A. Sims**, former head of Fairchild's NEPA Division, has been appointed assistant general manager of Hamilton Standard Division, United Aircraft Corp., **Roy H. Coleman** has been named head of manufacturing for Bell Aircraft Corp.'s Helicopter Division.

PLANES & EQUIPMENT

Local Service Planes: Two local service airplanes are needed, according to CAA Administrator **Charles F. Horne.** One is a high-speed 30-passenger plane; the other a 15-place craft capable of using 3,000 foot runways. The latter plane, he said, would fill the gap between executive transports and the Douglas DC-3.

Plane Tour: Agricultural plane developed at Texas A&M College with CAA and industry cooperation will make extensive demonstration tour this summer. Spray equipment is now being installed, and plane is being flight tested for dive and spin characteristics. Tour is to complete accelerated service tests so that only minor certification details will remain when plane returns to Texas A&M in autumn. It will be demonstrated to aerial applicators and manufacturers.

(Continued opposite page 66)

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contents

Mobilization Brings Billion-Dollar Backlogs
Partial Rearmament Far Short of World War II Peak .. 11

Rapid Writeoff Approvals Lag for Aircraft, Missiles
424 Aviation Applications Pending 13

Transit Van—Universal Cargo Container
System Cuts Time and Cost of Freight Handling 14

Six Airlines Show Profit Without Mail Pay
Trunks' Support Dependence Declines to 8% in 1950 16

French Setting Up Territorial Airlines
Air France Shares Services, Finances with Local Interests 17

Industry PR's Meet Pentagon Counterparts
Aircraft Public Relations Men Hold Week-Long Meeting .. 20

Beech's Twin-Bonanza Wins TC
Scaled-Down Transport with Big-Plane Design 27

NACA's High-Speed Research Program
Wind-Tunnel, Rocket Model Tests Revealed 31

Airlines Pushing Convention Selling as Revenue Booster
20,000 Meetings Offer Big Market This Year 41

Fewer, Better Maryland Airports Urged
$2½-Million Proposal Features State Ownership 50

State Crop-Dusting Laws Increasing
State Aviation Directors Urge Minimum Regulation 56

departments

Airline Commentary	49	Letters	8
Airports	50	Local Operations	56
Between the Lines	23	London Letter	17
Boedy's Album	63	New Products	39
Books	61	Obituary	61
Calendar	16	Operations & Maintenance	31
Cross-Country	59	Over the Counter	43
Design Engineering	27	Production Spotlight	24
En Route	65	Traffic & Sales	41
Extra Section	38	Washington View	57
In Flight	62	Wings of Yesterday	61
Index to Advertisers	61		

other publications

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tion Board was magnificent. There is no doubt whatever that without this Board the industry could never have achieved the rate and excellence of production which did so much toward hastening the end of the war. At the moment the materials situation in the aircraft industry is not critical but there are many signs that trouble is coming, especially with regard to civil aircraft which are vitally needed in the present effort. Authority over all aircraft production should be raised to the level it deserves in the defense picture.

"Sell Or Else"

AFTER twenty years of perseverance in the aviation business with some mighty slim pickings much of the time, Joe Garside and his associates thought they had finally made the grade, when their Wiggins Airways was awarded a local service airline certificate in the New England area several years ago. The route structure wasn't good, it didn't make the best sense, but Garside was grateful for a start.

It was tough going. Six twin-engined Cessnas didn't comprise a good airline fleet but they were a start. There were airport troubles and instrument operating troubles. Garside hoped to replace the Cessnas with DC-3's but the CAB gave no encouragement to this and no promises or encouragement about a certificate renewal. You can't finance new equipment without any security of existence whatever.

CAB frowned on merging into Northeast Airlines. It also frowned more recently on purchase of two twin-engined de Havilland Doves. During the past three years members of the Board have come and gone, so did chairmen, and so did the staff. Policies changed with each new shift of personnel and Board members.

But Garside plugged along, gradually activating his route system during 1950. It wasn't until several months ago that he succeeded in getting permission to carry air express.

Late in May Joe Garside came to Washington to see about his certificate renewal. It had actually expired March 31 but the Board had extended it pending a decision. He called on Gordon Bain, who joined CAB earlier this year as director of the Air Operations Bureau. Bain gave Joe the news: Wiggins must sell out to Robinson Airlines—or just go out of business with an expired certificate.

No merger, no continuing interest, no formal Board notice—just sell out or the certificate will expire and there won't be anything to sell. Of course the Board would see to it that Garside and his associates didn't close up shop owing a lot of money. Mail pay would clear up the bills, just as in the case of Florida Airways.

Joe Garside knows everybody and everybody else knows that Wiggins Airways as it exists today is not what you could call an economically successful venture. Considerable mail pay is required. But CAB put Wiggins into operation and the assumption was pretty clear that the New England feeder system would be given a chance to build up an experience record. Maybe make some changes that would help the economic picture. Find out what paid off and what didn't. But without even one solid full year of experience, Wiggins is told by a bureau chief that he must sell—not to just anyone, but to a specific carrier.

Shotgun weddings are never pleasant. It's been a blow to Garside, an intelligent, able and hard-working pioneer of the aviation business who just wants to do a good job. Robinson is a local service line in the same area, and a merger of the two systems actually makes some sense. But the manner in which CAB acts is open to question. CAB can be awfully reckless and ruthless with other people's money and interests. If Wiggins wasn't worth continuing for a backlog of experience, it should never have been certificated in the first place. And once certificated, CAB had a responsibility to nurse it along, to make helpful changes that would lessen the mail pay percentage.

It's another in the series of blunders by CAB in starting something it suddenly decided later it couldn't finish. And wouldn't it have been a little more honest and decent if the Board itself had called in Joe and broken the news? Getting a "sell or else" death notice from a bureau chief is somewhat on the inexcusably derelict side.

Bouquet

TWA has completed the second series of off-season familiarization trips by its employes and we think it is one of the finest educational efforts being made by any airline. Since the program was started in 1949, 144 U. S. employes of TWA have traveled to Europe and 72 overseas employes, all nationals of other countries, have come to the U. S. Each tour lasts about three weeks. On the other side the U. S. employes visit the major stops on TWA, combine sightseeing with learning about international airline problems. On this side the employes from abroad become familiar with TWA's methods of doing business, they visit in homes, travel coast to coast, and get in plenty of sightseeing. E. O. Cocke, v.p.-traffic, and Clyde Fullerton, general sales manager, who developed the program, are to be commended for an A-1 idea that is paying off in better passenger handling and higher morale.

Al Near

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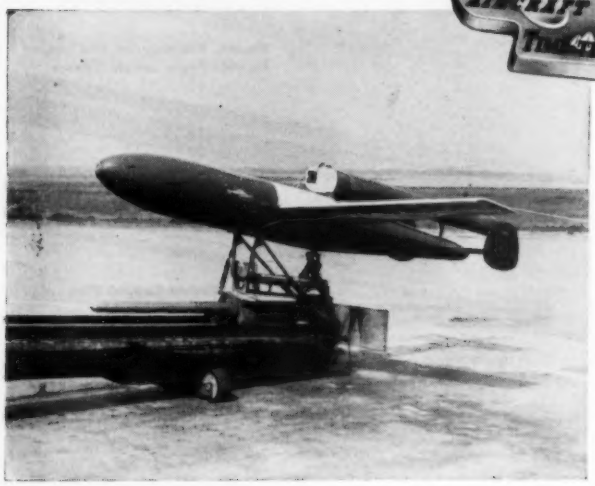

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LETTERS

Shakespeare on Confusion

To The Editor:

Your excellent editorial "Win By Confusion" in the April 30 issue of AMERICAN AVIATION recalls to mind a passage in Shakespeare's Henry IV. The king on his deathbed gave his son this talk:

"I had a purpose now
To lead out many to the Holy Land,
Lest rest and lying still might make them look
Too near unto my state.
Therefore, my Harry
Be it thy course, to busy giddy minds
With foreign quarrels; that action hence borne out
May waste the memory of the former days."

CORLEY McDARMENT,
Alexandria, Va.

Non-Skeds Heard

To the Editor:

Reference is made to your editorial of May 14, "Non-skeds Heard Again." concerning the recent investigation into the plight of the nonscheduled airlines by the Senate Select Committee on Small Business.

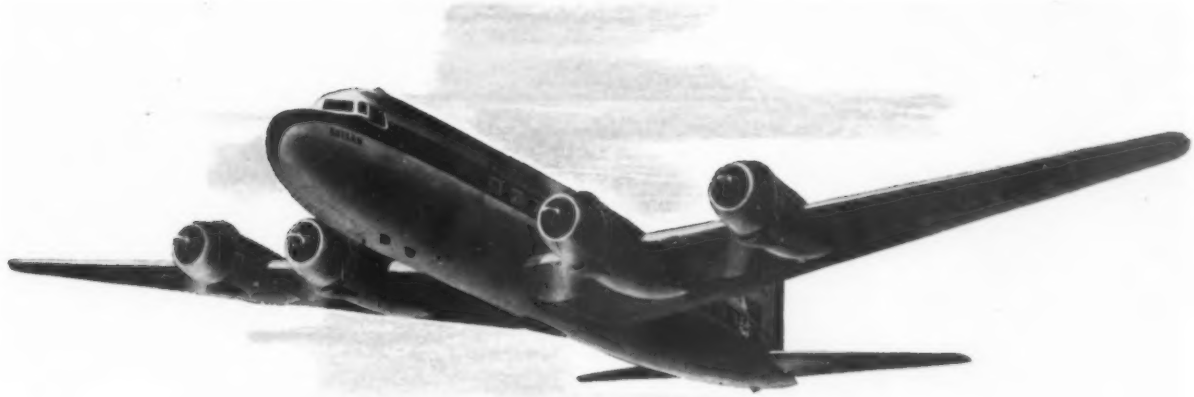
While I do not agree with the attitude of your editorial, it is not the purpose of this letter to quarrel with what, I assume, is your considered opinion of this matter. But the thing that did bother me was the somewhat left-handed attack your editorial made on the nonscheduled industry by falsely charging non-sked carriers with violations over which they have no direct control, and presenting arguments which have been completely refuted time and time again.

Your charge that nonskeds "skim the cream" of air transportation is an old one which the scheduled air lines have been monotonously singing for several years despite a survey conducted by the U. S. Census Bureau which proved that more than 75 per cent of the passengers utilizing nonsked service would not have flown otherwise because of the high cost of the luxury service offered by the scheduled airlines. If this isn't a "new market," I don't know what is.

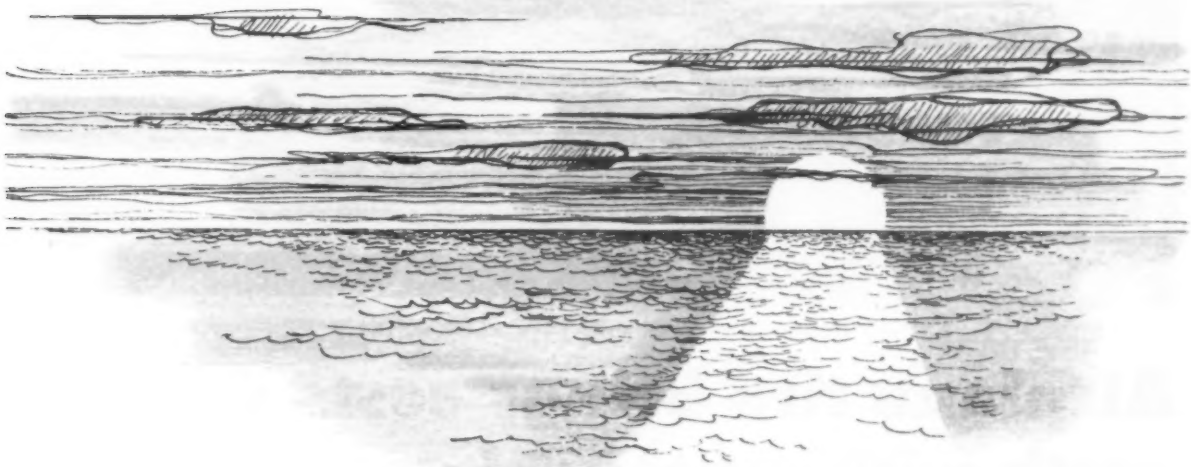
Likewise, your charge that nonskeds "have grabbed easy money" has no basis when you consider the tremendous difficulties these operators have encountered from the Civil Aeronautics Board and a concentrated campaign against nonskeds conducted by the scheduled airline interests. The nonskeds deserve some credit for overcoming these obstacles and developing a low-cost air transportation service which now makes air travel available to at least a small proportion of that 90 per cent of our population who otherwise would be denied this mode of transportation by the high cost of scheduled service.

I was especially surprised at your charge that "some non-skeds have given all air transportation a black eye by fraudulent advertising and failure to live up to claims." As an acknowledged expert in the aviation field, you should

(*Please Turn to Page* 61)



SKYDROL adds extra safety to far-reaching skyways of PAL



Trans-Pacific travelers who follow the "Route of the Orient Star" to Manila or Madrid . . . to Tokyo or Tel Aviv . . . soon will enjoy even greater safety. Philippine Air Lines has equipped cabin superchargers . . . in *all* its planes . . . with Skydrol, Monsanto's fire-resistant-type hydraulic fluid. Skydrol will serve in superchargers and hydraulic systems of PAL's DC-6B's, which now are being built.

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Write for a copy of the booklet, "*More Safety in the Air with Monsanto's Skydrol*," which gives full details on how Skydrol can serve you. MONSANTO CHEMICAL COMPANY, Organic Chemicals Division, 1700 South Second Street, St. Louis 4, Missouri.

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MONSANTO
CHEMICALS AND PLASTICS

SERVING INDUSTRY . . . WHICH SERVES MANKIND

B.F.Goodrich

Airplane tire brings costs down to earth without touching the ground

ONE OF THE BIG COSTS of moving cargo by air is the time and expense of getting it on and off the plane. But when Douglas designed the Globemaster II, they had some ideas which promised to cut plane loading costs way down. They put huge clamshell doors and ramps into the nose for faster loading. And amidships they installed an elevator that would handle cargo in a fraction of the usual time.

The elevator was designed to be powered by two electric hoists with rubber-tired driving wheels. But here, the Douglas engineers ran into a problem. The wheels called for 6-inch rubber tires which would give good traction under all kinds of operating conditions. The tires would have to withstand temperatures of −60°F without shrinking away from the track they rolled on. They would also have to take heavy loads without becoming permanently misshapen. Looking for the right kind of rubber to do this job, Douglas engineers brought the problem to B. F. Goodrich.

In manufacturing pallet rollers—rubber wheels that carry heavy loads in factories—B. F. Goodrich had already developed a special rubber compound which looked as though it might do the trick. Tires were made of this compound for the Douglas C-124 and were tested under extreme temperatures and loads. And the little tires proved to be the answer. They're another example of how B. F. Goodrich research in rubber is helping the aviation industry with some of its toughest problems. *The B. F. Goodrich Company, Aeronautical Division, Akron, Ohio.*

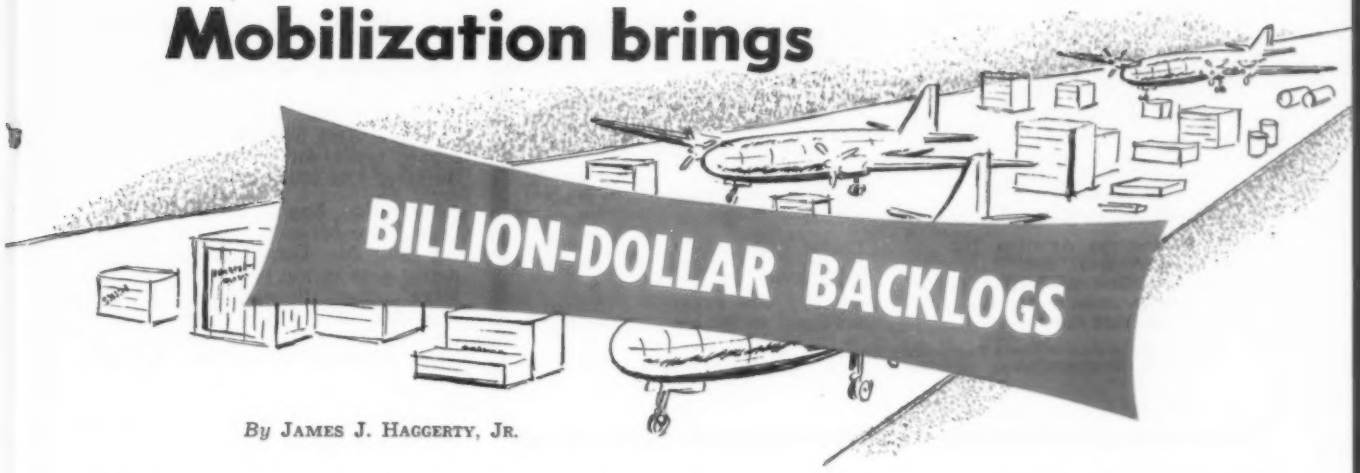
B.F.Goodrich
FIRST IN RUBBER

ESTABLISHED JUNE 1, 1937

American Aviation

VOLUME 15 NUMBER 2

Mobilization brings BILLION-DOLLAR BACKLOGS



By JAMES J. HAGGERTY, JR.

WITH the mobilization program now approaching its peak, the backlogs of aircraft companies are soaring, with several either over or pushing very close to the billion-dollar mark.

But despite tremendous increases in labor and material costs over the past seven or eight years, they are still nowhere near the astronomical figures of World War II, pointing up again that "mobilization," as we know it today, is only a partial rearmament.

However, aircraft companies have come a long way, dollarwise, from the lean years of the Louis Johnson regime. An AMERICAN AVIATION survey of 12 major aircraft companies for whom complete data are available shows that their combined backlogs have jumped 340% since December 31, 1949, the mid-point of the fiscal year 1949 when "economy" was the Administration key word.

Dollar Yardstick

A comparison with World War II figures is not very realistic, if used as a measurement of the degree of production.

- First, planes today are a lot more costly to build than their World War II counterparts because of their increasing complexity.
- In the second place, they would have cost more if they were identical, since labor and material costs have skyrocketed.

Moreover, some of the major companies today were not major producers during World War II; McDonnell Aircraft Corp., for instance, has a backlog today more than five times greater than its peak backlog in World War II. Northrop Aircraft also has a larger backlog today than it had during the war, and other individual companies come close to matching their war peaks.

On the other hand, Consolidated Vultee Aircraft Corp., a major producer of bombers both now and during the last war, currently has a backlog just a little over one-fifth as large as it was in January, 1944, its peak war month. So the comparison should be used only as a measure of the dollars being expended in the industry then and now, not as a production yardstick.

43% of War Peak

Total backlog of the 12 companies surveyed is now just 45% of what it was during their peak war months, which varied throughout 1943, 1944 and 1945. During the war years, six of the companies topped the billion-dollar mark and two ran over $2 billion.

At present, only one company is admitting to a billion-dollar backlog in its official statements. But several companies are shy about reporting business for which they have orders but for which money has not yet been allocated. The Air Force and Navy, for instance, frequently award letter contracts for planning purposes which they plan to finance out of next year's funds. This is legitimate business and should be counted in the company's backlog.

In some cases, companies report this as "business in negotiation," but in others it is not reported at all. Thus, in practically all cases, the backlog figures contained in the survey table (see p. 12) are low. From this standpoint, five companies whose official statements list backlogs ranging from $700,000,000 to over $1 billion can be considered to be "billion-dollar companies."

Big Two-Year Jump

The highest backlog reported for December 31, 1949, was $365,000,000. At present nine companies have topped that mark and at least three of them have doubled it.

Here are the "Big 15" companies in the aircraft and engine business, in order of their dollar backlog: Boeing, United Aircraft, Lockheed, Douglas, North American, Convair, Republic, Martin, Curtiss-Wright, Northrop, McDonnell, Bell, Fairchild, Beech and Piasecki.

It must be pointed out that the dollar totals mentioned above and in the accompanying chart do not reflect that amount of dollar volume in the company's treasury. In all cases, companies report as backlog the gross value of the aircraft or engines ordered from them. Most companies subcontract 35 to 45% of their work and spend another 25% with suppliers.

How They Rank

The following are the individual backlogs and the type of work being done:

- **Boeing Airplane Co.:** Building C-97 transports and B-50 bombers at Seattle and B-47 jet bombers at Wichita. Also has production orders for the new B-52 jet bomber, to be built at Seattle. Latest backlog "over $1 billion."
- **United Aircraft Corp.:** Biggest work

How Industry Backlogs Compare

Company	Now* (000 omitted)	Dec. 31, 1949 (000 omitted)	World War II Peak (000 omitted)
Beech Aircraft Corp.	$ 100,000	$ 13,000	$ 250,000
Bell Aircraft Corp.	225.000	32,000	550.000
Boeing Airplane Co.	1,000.000	365,800	N. A.
Consolidated Vultee Aircraft Corp.	550.000	207,000	2,450,000
Curtiss-Wright Corp.	365.750	132,700	N. A.
Douglas Aircraft Co.	788.552	275.499	2,867.000
Fairchild Engine & Airplane Corp.	175.000	80,100	269.000
The Glenn L. Martin Co.	400,000	72.000	1,364.500
McDonnell Aircraft Corp.	300.000	61.896	53.588
Lockheed Aircraft Corp.	850,000	229,746	1,500,000
North American Aviation, Inc.	700,000	228.000	1,422.000
Northrup Aircraft, Inc.	300,000	70.000	173.000
Piasecki Helicopter Corp.	100.000	N. A.	N. A.
Republic Aviation Corp.	500,000	36,983	505.000
United Aircraft Corp.	910,000	310,000	1,255,000

NOTE: Grumman Aircraft Engineering Corp. not available.
* Or most recent available.

load is in Pratt & Whitney Aircraft Division, building J-42, J-48 and J-57 jet engines, R-4360 piston engines, various smaller engines. Chance Vought Division is building Navy F4U piston and F7U jet fighters. Sikorsky Aircraft Division is building various helicopter types and Hamilton Standard Division is turning out propellers and miscellaneous other aircraft products. Total corporation backlog is listed as $910,000,000, is probably over $1 billion counting unfinanced work and orders since the reporting date.

• **Lockheed Aircraft Corp.:** Building 12 different types of aircraft, including jet fighters and trainers for both Air Force and Navy, patrol bombers, military cargo and early warning aircraft and commercial Constellations. Also has B-29 reconditioning contract for its Georgia Division. Backlog $850,000,000.

• **Douglas Aircraft Co.:** Has a production order to build Boeing B-47 jet bombers at a new plant in Tulsa, Okla., in addition to large orders for its own products, which include Navy fighters and commercial and military transports. Backlog $788,552,000.

• **North American Aviation:** Building F-86 and F-86D jet fighters and a Navy version of the same plane, the FJ-2; also T-28 and T6G trainers for the Air Force and Navy AJ-1 attack bombers. Backlog $700,000,000.

• **Consolidated Vultee Aircraft Corp.:** Building the Air Force B-36 bomber at Fort Worth and the T-29 trainer at San Diego. Also has commercial backlog in the new Model 340 twin-engined transport. Backlog, $550,000,000, which will be boosted by a forthcoming production contract for a guided missile, the Terrier.

• **Republic Aviation Corp.:** Has only one basic plane type but has large scale orders for it in two versions—the F-84E and F-84F jet fighters. Backlog, $500,000,000.

• **The Glenn L. Martin Co.:** Major concentration of the backlog is in recently-acquired orders for production of the B-57A Canberra light bomber. Also building Navy P5M flying boats and 4-0-4 commercial transports. Backlog $400,000,000.

• **Curtiss-Wright Corp.:** Now out of aircraft production, the company's work is concentrated in Wright Aeronautical Corp., which has large orders for J-65 Sapphire jet and R-3350 piston aircraft engines. Company also has a good backlog in propellers and electronics. Backlog, $365,750,000.

• **Northrop Aircraft, Inc.:** Bulk of business is in the twin-engined Air Force F-89 all-weather fighter. Backlog, $300,000,000.

• **McDonnell Aircraft Corp.:** Building Navy jet fighters, principally the F2H Banshee, a shipboard jet. Backlog, $300,000,000.

• **Bell Aircraft Corp.:** Major production is jet pod packages for the Convair B-36 and Boeing B-47 bombers. Also building various helicopter types for all three services. Backlog, $225,000,000.

• **Fairchild Engine and Airplane Corp.:** The Aircraft Division is turning out Air Force C-119 Packets, major item in the backlog. FEAC has three other divisions: the Engine Division, building a small turbojet engine and an auxiliary aircraft engine, plus components for the General Electric J-47 engine; Stratos Division, which manufacturers chiefly cabin superchargers; and the Guided Missiles Division, which builds completed missiles and electronic guidance systems for missiles. Last reported backlog $175,000,000, since increased by a large expansion in C-119 business.

• **Piasecki Helicopter Corp.:** Building military helicopters, chiefly large transport types, for both the Air Force and Navy. Backlog, $100,000,000.

• **Beech Aircraft Corp.:** Main business is in subcontract work from major airframe builders, chiefly components of the Boeing B-47; also builds and reconditions light commercial and military aircraft like the Twin-Beech, the Bonanza and Twin-Bonanza. Backlog, $100,000,000.

THESE MEN in the National Production Authority's Aircraft Division determine which aircraft companies will get the materials they need to keep production rolling. Left to right: Carey A. Smith, acting chief, industry services branch; Robert Boggess, chief, military requirements section; Robert J. Page, chief, facilities expansion section; Col. George H. Moriarity, chief, production-operations branch; Joseph J. Mitchener, Jr., division director; John A. Priest, acting deputy director; Thomas G. Harris, chief, programs and distribution branch; Jess Y. Teague, labor specialist, and Col. Michael M. Karlene, director of conservation.

424 Applications Pending:

Rapid Writeoff Approvals Lag for Aircraft, Missiles

By ROBERT M. LOEBELSON

EXPANSION of facilities to increase production of aircraft and related equipment is vitally necessary during an emergency like the Korean "police action" and a possible World War III but many manufacturers are naturally hesitant to invest in new plants and equipment which will be almost useless when the nation gets back to a peacetime economy.

It is for this reason that Congress last year approved a program which will stimulate production to meet defense requirements. Under the program manufacturers of aircraft and other defense products are permitted to write off a high percentage of the cost of a new plant within five years. Before this amendment to the Revenue Act was approved the period over which a new facility was depreciated was usually 20 to 25 years.

From October 30, 1950 to January 25 of this year certificates of necessity were issued by the National Security Resources Board. When the Defense Production Administration was created it was charged with the responsibility for issuing these certificates.

1,300 Issued

Thus far, the two government agencies have issued more than 1,300 certificates authorizing the quick amortization of more than $5,500,000,000 in new plants. Of these 140 were granted for the construction of new factories to build aircraft and aircraft parts. The factories will cost about $238,200,000 and $169,000,000 of this amount may be amortized in 60 months. The rest will be deducted from company taxes during the next 20-25 years.

In all, therefore, about 71% of the money to be spent on new plane plants is eligible for quick tax write-offs. The DPA does not arrive at this figure in any arbitrary manner. Three factors are considered before determining the allowance for rapid amortization:

- **Estimated capacity** of the aircraft industry.
- **Postwar usefulness** of these new plants to their owners.
- **Degree of financial aid** believed necessary to encourage expansions.

Despite all this, the aircraft expansion picture is not as rosy as it could be. At least 424 other applications for plants, to cost an additional $360,300,000, have been filed by aircraft builders. No action has been taken on these requests as yet, despite talk of a 95 to 150-wing air force.

Few Missile Plants

The situation is even worse in the guided missile and rocket field. Although the Defense Department is said to be relying heavily on the use of these weapons in any future war, the DPA has approved only four new plants costing $7,400,000 so far. These plants have been certified at 85.1%, meaning that $6,300,000 can be written off in five years and the rest over a longer period. Still pending are 25 other applications for guided missile plants, asking for certificates of necessity totaling $16,000,000.

Also lagging are requests for new facilities to produce electric and electronic equipment. At last report 379 applications, seeking rapid tax write-off certificates for $253,800,000 in new factories, had been filed with the DPA. But only 59 had been approved. These authorized the rapid amortization of $54,800,000 (or 74.9%) of the $73,200,000 to be spent on electronic plants.

Half the Battle

Aircraft companies and equipment manufacturers still have a problem even when certificates of necessity are granted—they must raise the money to build the new plants. They usually accomplish this in one of three ways:

1. By selling more stocks and bonds. Not too much difficulty has been encountered by the big companies because buyers like to get in on the "war babies."

2. By borrowing from banks and other financial institutions. Many companies have negotiated such loans. And such credits should become even easier to obtain as a result of a new law which has just been signed by the President. This law eliminates a previous ruling that the government can make claims against a defense contract for taxes and refunds, even though the contract is being used as collateral for a loan.

3. By obtaining direct loans from the Reconstruction Finance Corp. after directives are issued by the DPA. Most of the lending being done by the RFC at present is in line with defense production.

Congressional Objections

Some of these concessions, specifically rapid tax amortization certificates and direct loans, may be reworked before too long. A House executive expenditures subcommittee has condemned both of these stimuli to production, calling the tax scheme "the biggest bonanza that ever came down the government pipe" and suggested that the government might want to discontinue or change its direct loan procedure.

Although the subcommittee does not have legislative powers in connection with either program, it does have considerable influence. The group charged the administration of both programs has been "both unsound and detrimental to the public interest in many respects."

Wingtip Spartan— Added speed, stability and lift have been obtained with the addition of wingtip 60-gal. tanks to this Spartan Model 12 prototype recently completed by Spartan College of Aeronautical Engineering and School of Mechanics at Tulsa, Okla. Max Balfour, school director, who flew from Tulsa to Washington in 4 hours and 10 minutes recently, estimates maximum speed of 220 mph., landing speed with flaps at 65 mph., rate of climb 2,200 fpm, range 1500 miles, service ceiling 22,000 ft. and takeoff with load 650 ft. Another unusual feature is electrical trim-tab system. Plane will not be produced unless military orders are received.

Transit Van—Universal Cargo Container

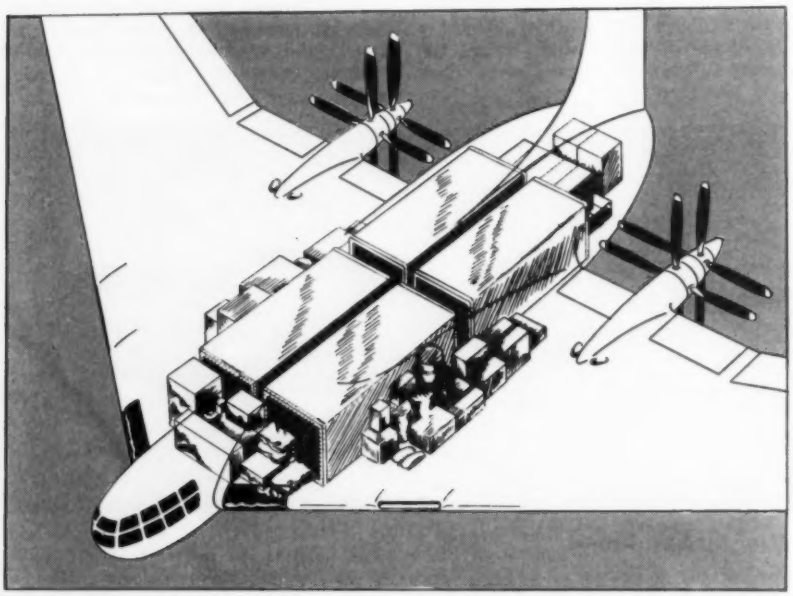
NORTHRUP's All-Wing Cargo Pack plane, on which all development work has been dropped because of military production requirements, gives an interesting picture of what can be done with the Transit Van principle. Airplane height off ground is 11 feet six inches, the height required for truck movement as shown. The entire body of this truck is a Transit Van which would be lifted off the truck chasis and into the plane. Wing would handle four vans plus loose cargo.

By WILLIAM D. PERREAULT

ONE of the most interesting developments in the field of air freight handling is the Transit Van system of transportation. Strangely enough, the Transit Van Corporation is not yet ready to push the airborne phase of its system. It is carrying on work with the railroads while promoting general interest in its basic philosophy.

But the aviation industry is expressing interest in Transit Vans. During the recent cargo aircraft discussions of the Prototype Aircraft Advisory Committee, John Alison, president of Transit Van Corp. and former Undersecretary of Commerce for Air, was asked to discuss this system at length. Committee members were very much interested.

In a recent article discussing air mail transportation costs, John M. Redding, Assistant Postmaster General, gave considerable attention to the Northrop All-Wing Cargo Pack, a flying-wing cargo carrier built around the Transit Van units. Military demands have already forced Northrop to abandon even basic engineering work on the Cargo Pack but industry interest continues to grow.



INTERNAL arrangement of the Transit Vans in a flying-wing design of this type is shown here. In addition to the four van positions, room is also available for considerable loose cargo or as many as 28 passenger seats. Span-wise distribution of load within wing would reduce basic aircraft structural requirements.

England Uses System

What is the Transit Van system of transportation? Essentially, it's an old idea—one now in partial use in England. Heart of the system is an 8x8x20-foot van, constructed primarily of aluminum and magnesium, and arranged for rapid transfer from truck to railroad car or plane.

As a universal carrier, the Transit Van could be loaded at the factory door, trucked to the railroad or airport and transferred without touching the actual shipment, carried to its destination, off-loaded to another truck and delivered into the congested area of any city.

Eliminating in-transit cargo handling would drastically reduce breakage; equipment utilization would be sharply increased, handling costs would be lowered. The shipper could specify any combination of air and surface shipment desirable for opti-

mum service without experiencing delays and paying high handling charges.

The 8x8x20 Transit Van (see photo) has an 1100-cubic-foot capacity, is rated to carry in excess of 30,000 pounds. A smaller version, only 14 feet long, has 800 cubic feet of capacity, is rated at 20,000 pounds. For trucking purposes a 22-foot, single-axle trailer unit will handle a TV or, the road laws permitting, two units could be towed in tandem. A 45-foot railroad flatcar would handle two TV's, the equivalent in load capacity of a small boxcar.

ONE of the two Transit Van prototypes is shown here being transferred from a truck to a railway flatcar. Prototypes have recently been given a 30-day test operation on Southern Pacific Railway's Los Angeles-San Francisco route. This van is 8 x 8 x 20 feet in size, two units are equal in capacity to a small box car.

Air Cargo Application

The Northrop All-Wing Cargo Pack, while not an active design today, provides an interesting view of what can be accomplished with the Transit Van in the aviation field. Northrop had originally proposed two different models of the cargo plane. The smaller was a twin-engined plane powered by two 12,000-horsepower XT-37-NA-3 engines. The larger plane would use four Allison 500-C1 turboprop engines rated at 7500 horsepower each.

It can be seen that these would be big airplanes. The "small" one would have a 172-foot wing span, be 80 feet 2 inches long and 33 feet high. Gross weight would be 206,000 pounds as against 101,349 pounds empty weight. Powered by the two Turbodyne turbine propeller engines it would cruise at almost 400 mph, carrying 33 tons payload over a 3500-mile range.

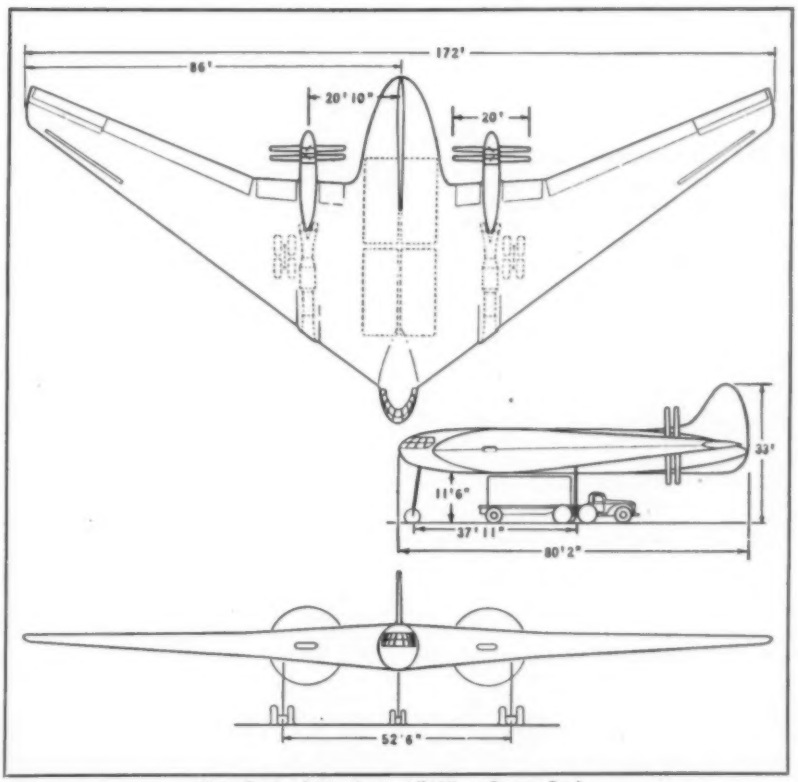
Within the fuselage wing, this twin-engined version would house 6,340 cubic feet of cargo space. This would provide space for four 7x8x20-foot Transit Vans plus 2740 cubic feet of loose cargo. Some 28 passenger seats could be provided in place of the loose cargo space.

Could Cut Rates

Northrop's aim in designing this aircraft, based on the Northrop Flying Wing Bomber, was to make possible a 50% reduction in feasible air cargo rates by providing ton-mile operating costs of 9-10c. This, Northrop felt, would "competitively induce" about 3 billion ton-miles of air cargo traffic annually, about six times the current volume.

The four-engined version, powered by Allison engines, would gross at 283,000 pounds, have an empty weight of 124,000 pounds. Span would be 184' 2" and length 102' 9". With cruising speeds in the 380-400 mph range, the All-Wing Cargo Pack would have a maximum payload of 35 tons with 3500 miles range. Direct operating costs of 2.75c per ton-mile would be feasible making a freight rate of 5c possible. This plane would provide 7,925 cubic feet volume with only 53% of this taken up by the Transit Vans and 3,685 cubic feet for loose cargo or passenger seats.

Empty, the Transit Vans would weigh somewhat over 2,000 pounds each. In a design such as the Northrop wing, some of this weight would be offset by the span-wise distribution of the load which would reduce aircraft structural requirements. In all aircraft applications the TV would permit shipping either without individual crating or with much lighter packaging, with considerable weight and cost savings.



Twin-Engined Northrop All-Wing Cargo Pack.

Wide Use Needed

Real value of the Transit Van System depends on its universal adoption on a scale which would permit this ready interchange between different carriers. Alison's Transit Van group is now concentrating on the railroad phase. It has teamed up with the North American Car Corp. of Chicago in this effort and only recently has completed a 30-day test operation with the Southern Pacific

Railroad between Los Angeles and San Francisco.

The system concept now being marketed by The Transit Van Corp. was developed by Hodges Research and Development Co. of Redwood, Calif. The work done by Hodges underscored the need for a universal van readily transferable between different modes of transportation and TVC was established as an independent company to pioneer in this field. Much has been accomplished since then.

The two prototype vans incorporate many worthwhile ideas. Typical of these is the method used to load and unload vans from the truck bed to a railcar or loading platform. Cogged rails are buried in the floor of the trailer truck. With a van already in place on the truck bed, a special section of rail can be swung out alongside the truck.

A pinion gear, driven by a Vickers hydraulic motor, connects into the rail cogs and, by means of a special brace, is attached to the van body. As the hydraulic motor turns it drives the pinion along the cogged rail, moves the van body. Two of these units, one at each end of the van up a 35-degree incline to meet the level of a flatcar or other carrier.

Special bridging rails permit the van to move smoothly 12 inches vertically without appreciable tipping (see photo). Free castering wheels, which can also be locked in a fixed position, are provided on each corner of the van mounted on two-way hydraulic rams. These wheels can be retracted completely off the surface or can be lowered and used for moving the van around the area with a small tow truck.

End loading doors on the Transit Van swing 270 degrees so that they fold alongside the body. This makes the entire van width available for loading large packages. A smaller door is provided in the middle of the van on one side and can also be provided at the front end.

Eventually the Transit Van Corp. hopes to have all types of special vans for refrigerated shipments, liquids, and for any other application which might lend itself to this type application. Transit Van's address is 806 Chestnut St., Redwood City, Calif.

Six Airlines Show Operating Profit Without 1950 Mail Pay

Six of the 19 certificate domestic trunk airlines would have realized an operating profit in 1950 without benefit of mail pay, according to a survey by AMERICAN AVIATION.

Last year the industry netted over $15 million in operating income before mail pay. The trunk lines' record net operating income of $62,497,641 in 1950 was based on total operating revenues of $529,321,678, of which $46,596,638 were mail revenues, or 8.8% of the total.

The six carriers, as shown in the accompanying table, and operating income which would have been derived without mail pay are: American, $17,002,317; Delta, $381,766; Eastern, $6,129,596; National, $721,675; TWA, $832,833; and United, $6,876,407.

Dependence of the trunk-lines on mail support has steadily declined in the last ten years to the 1950 low of 8.8% of total revenues. In 1940 mail pay mounted to 26.03% of the carriers' total operating revenues, dropped to 15.59% in 1945, and was down to 9.79% in 1949.

How 1950 Mail Pay Affected Operating Income

Airline	Mail Pay	% of Total Operating Revenues	Net Operating Income (Before Taxes)	Net Operating Income Without Mail Pay
American	$ 5,916,510	5.16%	$22,918,827	$17,002,317
Braniff	2,193,719	13.96%	2,104,404	—89,315
Capital	3,816,875	12.80%	2,236,753	—1,580,122
Caribbean-Atl.	252,528	28.93%	35,265	—217,263
C & S	1,747,320	19.10%	704,070	—1,043,246
Colonial	1,143,487	27.37%	—385,664	—1,529,151
Continental	1,729,247	27.79%	383,907	—1,345,340
Delta	1,770,067	9.38%	2,151,833	381,766
Eastern	3,372,004	4.35%	9,501,610	6,129,596
Hawaiian	32,733	.93%	—5,660	—38,393
Inland	715,612	23.34%	480,376	—235,236
MCA	1,658,714	20.63%	688,281	—970,533
National	1,747,962	10.31%	2,469,637	721,675
Northeast	1,519,268	23.88%	120,537	—1,398,731
Northwest	4,411,310	13.12%	—2,894,925	—7,306,235
Trans-Pacific	.....	.....	—102,596	—102,596
TWA	5,853,250	7.99%	6,686,083	832,833
United	7,341,612	7.67%	14,218,019	6,876,407
Western	1,374,420	12.29%	1,186,884	—187,536
TOTALS, 1950	**$46,596,638**	**8.80%**	**$62,497,641**	**$15,901,003**
1949 totals	45,031,010	9.79%	24,300,951	—20,720,059
1945 totals	32,831,438	15.59%	33,451,627	620,189
1940 totals	20,009,123	26.03%	5,967,028	—14,042,095

Source: Reports filed with the Civil Aeronautics Board.

Aviation Calendar

June 11-16—1st Nat'l Congress of Applied Mechanics, Ill. Inst. of Tech., Chicago.

June 13—ASME semi-ann. meeting of aviation div., Toronto.

June 13-16—AWA Ann. Convention, Hotel Commodore, New York, N. Y.

June 18-22—American Society for Testing Materials ann. meeting, Atlantic City.

June 21-22—Local Air Service 2nd ann. seminar, Purdue University, Ind.

June 27-28—I.A.S. ann. summer meeting, Western Hqs. Bldg., Los Angeles.

June 28-30—Inst. of Nav. ann. meeting, Hotel New Yorker and Kings Point, N. Y.

July 4-12—EASC 18th Nat'l Soaring Contest, Harris Hill, Elmira, N. Y.

July 8-14—Transcontinental Handicap Air Race, New York to Los Angeles.

July 9-18—Mass. Inst. of Tech. Special course, automatic stabilization and control of helicopters.

July 19-20—NASAO board of directors meeting, Ky. Dam State Park, Ky.

July 20-22—CAP Nat'l Drill Competition, D. C. area.

Aug. 15-19—99's 5th ann. All Woman Transcont. Air Race, Santa Ana, Cal., to Detroit.

Aug. 22-26—99's Int'l conv., Mackinac Island, Mich.

Aug. 25-29—Nat'l Flying Farmers Assn. 5th ann. conv., Ft. Worth, Tex.

Sept. 10-14—Instrument Soc. of America 6th Nat'l Instrument Conf. and Exhibit, Sam Houston Coliseum, Houston, Texas.

Oct. 24-27—NASAO ann. meeting, Arizona Inn, Tucson.

International

June 15-July 1—Paris Int'l Aircraft Exhibition, 1951, Grand Palais and Paris airport.

June 23—British Nat'l Air Races, 1951, Hatfield Aerodrome, Hertfordshire, Eng.

July 4-11—FAI, 44th general conf., Brussels.

Aug. —Intern'l Telecom. Union Extraordinary Admin. Radio Conf., Geneva.

Sept. 3-14—Third Intern'l Conf., convened jointly by the Royal Aero. Soc. and the Inst. of the Aero. Sciences of America, Brighton, Sussex, Eng.

Sept. 4—ICAO, SAR, 3rd session, Montreal.

Sept. 10—IATA 7th Ann. General Meeting, London.

Sept. 11—ICAO, Legal Committee, 8th Session.

Sept. 12-14—Soc. of British Aircraft Constructors, 12th Flying Display and Exhibition, Farnborough, England.

Oct. 9—ICAO, MAP, 5th session, Montreal.

French Setting Up Territorial Airlines

A new policy of setting up local affiliated airlines in a number of the territories which it serves has been adopted by Air France, one of the pioneer international operators.

At present, three affiliates are in operation, three more are being readied, and a seventh may be formed. Another, which has been operating, has gone out of business.

Before World War II and immediately thereafter, Air France devoted considerable attention to the development of local networks, using its own management, equipment and resources. Now, however, it feels that local interests should come into the companies, leaving it free to concentrate on operating its main air routes in Europe, those between France and the main centers of the French Union, and to the Americas, Near East and Asia. Air France maintains a stock interest in all but one company.

Three in Operation

Affiliates now operating are:

Air Atlas, Morocco. With five DC-3's, company is flying local services from Casablanca, the operating base, to Rabat, Tangiers, Marrakech, Agadir, Fes, Meknes and Oudjda. In addition, it operates beyond Morocco to Algeria (Oran and Algiers), Spain (Valencia) and France (Toulouse and Perpignan).

Tunis-Air, Tunisia. Operating local service with four DC-3's from Tunis to Sfax, Djerba, Gabes and Ghadames; also flying from Tunis to Algeria (Bone and Algiers), Corsica (Ajaccio and Bastia), France (Nice) and Italy (Rome).

Air-Liban, Lebanon, owned by various Lebanese and French interests. Air France holds no stock, but is linked to the company by various managerial, technical, sales and service agreements. Air-Liban flies three DC-3's from Beirut to Cairo, Baghdad, Istanbul, Djeddah (Arabia) and Jerusalem.

Two more airlines have been set up (not yet operating) in Africa, and one is being formed in Vietnam:

Air A.O.F., with headquarters in Dakar, will run routes in French West Africa.

Air A.E.F., Cameroun, will take over from Air France the routes in French Equatorial Africa and the Cameroons.

Air-Vietnam will take over local routes in the three former territories of Tonkin, Annam and Cochinchina, now united as Vietnam. It will be composed equally of French and Vietnamese interests, with management equally divided.

There is some possibility that a company will also be created in Madagascar.

One airline in which Air France had an interest has discontinued oper-

London Letter

By Richard G. Worcester

BRITISH automobile manufacturers are slowly getting into the aviation defense business in Britain. The Standard Motor Company—one of the larger companies—is studying the Rolls-Royce Avon jet engines with a view to building it. Austin in Birmingham and Ford at Dagenham, Essex, are both also looking around to see how their production capacity could be used to add to the output of the aircraft industry.

•

There is a feeling in the air here that the British missile situation has greatly improved. There is still very little evidence upon which to base this judgment, but Britain's great administrator, Sir Alec Coryton, would not have gone all the way out to Woomera in Australia to look at the desert. If Canberra information is to flow from English Electric to Glenn L. Martin why should not Martin exchange this by telling English Electric about the Viking? That would be real U. S.-U. K. collaboration. At present the only possible source of industrial help Britain could get from the U. S. would be if Boeing can pass on some details of ramjet and missile work to Bristol under their joint interchange agreement.

•

There has been surprisingly little reaction in London to the USAF interest in the Blackburn and General Aircraft 105,000-lb. Universal Freighter. This aircraft, powered by four Bristol Hercules sleeve-valve engines, is one of two prototypes which were ordered by the Ministry of Supply soon after the War. During the economic crisis at the time of the devaluation there were a number of Government retrenchments and the Universal was one of the projects which, it was then felt, could be put on one side. There seems to be little doubt that it was a hasty decision because this type of aircraft—which has no precise counterpart anywhere—is in a class which is vital. The English Channel is an effective defense barrier, but it is also an obstacle to supplying the British Expeditionary Forces on the continent and this design of flying box-car is just what is needed. The Australian operator, ANA, is also interested in the Freighter as a means of tripling the capacity across the Cook Strait in New Zealand, which is now to be run by Bristol Freighters operated by Airwork Ltd.

•

The French order for six Vickers Viscounts is generally regarded as only the first of a larger quantity which the French carrier will use. The aircraft on order will probably be delivered in 1954 after which the delay would be much less for any further orders. The aircraft is going to be used on the London-Paris run which is really too short for the prop-jet aircraft and a more suitable sector would be Paris-Stockholm. The Viscount is clearly being regarded by the French as a DC-4 replacement.

•

The London *Daily Express* recently did a real service by pointing out to its 4,000,000 readers the absurdly unequal pay scales of British pilots. It seems that only one or two of Britain's best experimental test pilots gets a salary of $7,000 (say $9,000 in purchasing power, as prices are a little less in the U.K.). Trevor Wade, who was killed in the prototype Hawker P.1081, apparently received a smaller salary than any old armchair airline pilot.

The really serious aspect of this situation is that whatever body it is that fixes these salary scales has done nothing all these months and years while a whole fleet of new prototypes was being tested. It can hardly ignore what the *Express* rightly calls the "flame of anger" at this anomaly but it has taken the death of yet another irreplaceable man to highlight it.

Britain ought, of course, to adopt the U. S. method of payment on contract for a series of tests. But whether there should be competition for the lowest bidder to undertake phase tests among suitably qualified men is another matter. To fix in advance the price of a series of trials presupposes that the pilot knows pretty well the risks involved.

In practice this is seldom the case and during the trials any number of unforeseen circumstances can alter the extent of the hazard. The main advantage of contract agreements is that pilots are very well paid while they are taking risks and enjoy a suitably high standard of living when they are not so exposed.

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Win By Confusion

ations. It was TRAPAS (Transports Aeriens du Pacific Sud) which was flying PBY Catalinas between the French islands of the Pacific. Service was halted, Air France states, because of the difficulty of finding equipment economically suited to the long stretches and because of the sparse traffic. Meanwhile, Air France is operating a monthly service from Saigon to Noumea, and from there to Bora-Bora, near Tahiti.

Each case has been a particular one, depending on the local interests concerned and the stage of economic and political development, but Air France points out that a general picture has gradually emerged over the past three years:

1. Local interests, rather than those of metropolitan France, are better suited to decide what their needs for air transportation are, what the essential routes should be, what they are ready to invest in them, how far they will be able to support them, and how they will control their management.

2. Air France, because of its experience, is able to furnish technical, commercial and particularly managerial know-how to run the local lines on a sound basis.

Three-Way Stock Split

Although the division of stock between the various interests is not identical in all cases, the general lines are very much the same. Air France usually holds about one-third of the shares, another portion is held by the French Overseas Development Corp. (Caisse Centrale de la France d'Outremer), and a major share is owned by the various local interests.

Each airline concludes a convention with the local government, granting to the company the concession for routes to be operated, and, if necessary, making an allowance for subsidies.

Relationship between Air France and the local airlines is the subject of various agreements, depending upon the amount of support required by each line. These include managerial, maintenance, and service agreements, as well as general agency agreements.

PEOPLE IN THE NEWS

Roswell L. Gilpatric, New York attorney, has succeeded **Harold C. Stuart** (resigned) as Assistant Secretary of the Air Force.

A. B. Curry of Miami has succeeded **Donald W. Nyrop** as chairman of the Air Coordinating Committee's Airport Use Panel.

Joseph C. Watson, former chief of CAB's operations division, has gone with the State Department as Civil Air Attache at the U. S. Embassy in the Philippines.

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Industry PR's Meet Pentagon Counterparts

THE drumbeaters of the aircraft industry, or, if you prefer, the public relations counsel of various companies who make up the Public Relations Advisory Committee of Aircraft Industries Association, met in Washington for a week-long powwow during the week of May 21.

PRAC held a series of business meetings at which the various public relations problems of the industry were discussed and AIA's budget for the coming year was okayed. Then, on Friday the 25th, they were guests of the Department of Defense at an off-the-record briefing at which top Defense officials outlined the war situation, the overall strategic plan, the Munitions Board program, the research and development program, manpower problems, etc.

At the annual election, Leland R. Taylor, assistant to the president of North American Aviation, was elected chairman of the PRAC, succeeding Richard W. Darrow, director of public relations for Glenn L. Martin.

Kickoff for the week's activity was a reception at the Carlton Hotel, where the staff of AMERICAN AVIATION played host to the p.r.'s and their military counterparts. Shown here are some of the group in convivial poses.

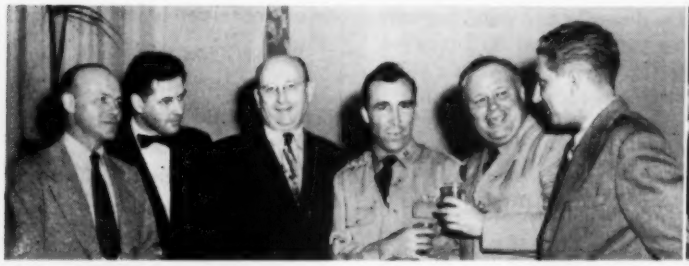
Leland R. Taylor of North American (center) and Capt. Gerald A. Harty, USAF public information officer (right), laugh at a Don Ryan Mockler crack. Mockler is secretary of AIA's Helicopter Council.

Left to right: Bill Wagner, director of public relations for Ryan Aeronautical Co.; Lt. Col. Sid Spear, USAF security officer; Vera Foster of American Aviation; E. J. "Bud" Huber, director of public relations for Piasecki Helicopter Corp.; and McDonnell Aircraft Corp.'s vice president and Eastern representative, Larry E. Williams.

Maj. Ralph Slater, USAF public information officer (second from right), looks completely disinterested in the whole affair as his fellow officers ponder his expression. Left to right, James Q. Cobb, Washington public relations representative of General Electric Co.; Capt. Robert Sellmar and Maj. DeWitt R. Searles of the USAF press section; Lt. Col. F. Clarke Newlon, assistant to the chief of public information of the Department of Defense; Slater and Lt. Alex Garvis, USAF public information officer.

James J. Haggerty, Jr., of American Aviation (center) interviews C. E. Blandford, Washington representative of Hughes Aircraft Co. (right), while Burt English of AIA (left) ogles the camera. Others are Roger C. Fleming, director of public relations of Allison Division, GMC (second from left) and Gaither Luttrell, West Coast AIA public relations representative.

Burt English of AIA (left) draws a laugh with his latest golf story from (l. to r.) Vern Johnson, Washington representative of Lockheed Aircraft Corp., Bert Goss of Hill and Knowlton, Inc., and John Canaday, director of public relations for Lockheed.



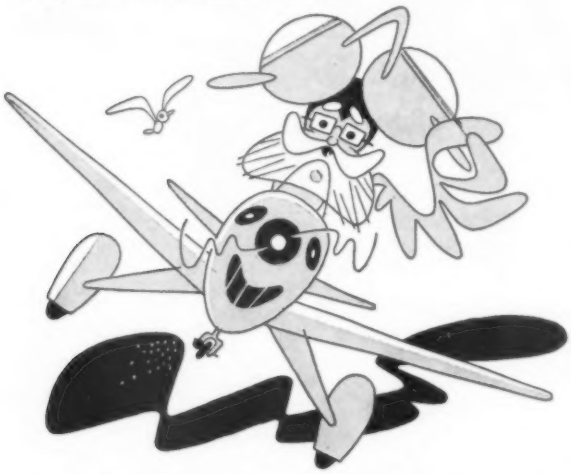
Lt. Cdr. William Bryson, Navy Bureau of Aeronautics public information officer, and Capt. Paul Bradley, USAF public information officer (second and third from right) strike a "spirit of unification" pose. Others: Clifford Guest of AIA, Warren R. Smith, public relations director of Fairchild Engine and Airplane Corp., Gerard B. Dobben of American Aviation, and C. E. Blandford of Hughes Aircraft (extreme right).

William A. Mara of Bendix Aviation Corp. (second from right) regales the chief host, Wayne W. Parrish, editor and publisher of American Aviation, with his latest story. The other listeners are (left) Avery McBee, director of public relations of AIA and Albert Smyser of The Glenn L. Martin Co.'s public relations staff.

The Birdmen's Perch

Watch 'er, Grampa, she's a rarin'!

Though this may come as something of a shock to you young buckos, flying isn't just for kids!



Fact is, there are a few active pilots over 80 and thousands more over 60.

And here's the pay-off! CAA records show that student pilots (we use the term advisedly) between 50 and 55 are the safest pilots of all—with a safety record five times better than that for student pilots in the 20 to 25 age group.

Next time you see a flowing white beard where a flying scarf should be, step aside, Junior—there goes a real flyer!

SPEAKING OF OLD-TIMERS—

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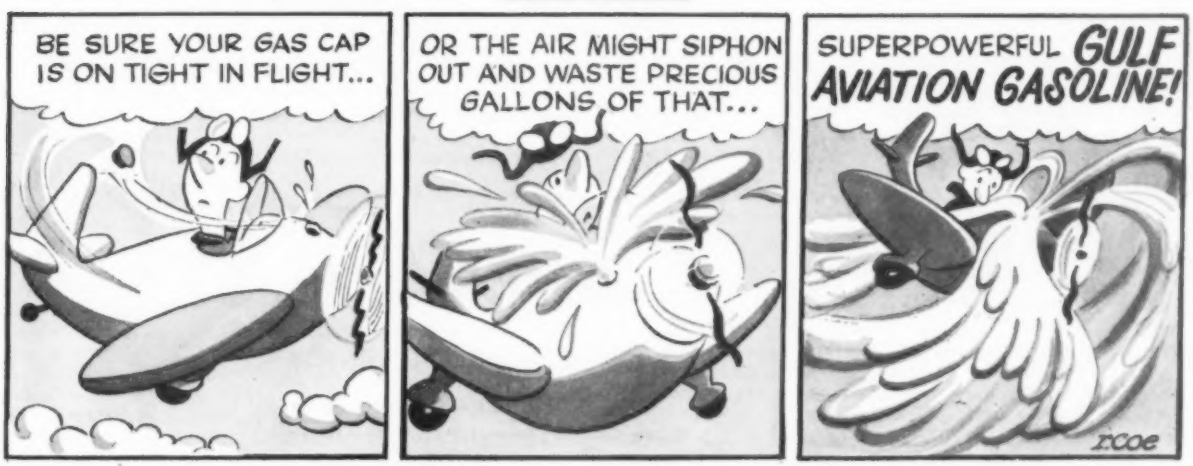
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Between the Lines:

•Vandenberg, Ready for Perennial Hill Query, Comes Up With Cake-Taker Definition

By James J. Haggerty, Jr.

FOR SOME time the term "groups" has been baffling the gentlemen of Congress who listen to military testimony on Capitol Hill. This particular unit of Air Force strength somehow seems to elude the mental grasp of the lawmakers, who at times appear to be normal, bright citizens. In every military hearing we have ever attended, some guy on the high bench peers over his bifocals and asks "General, what is a group?"

During the famed B-36 hearings a couple of years back the question became a standard gag line among reporters covering the controversy. Four or five times within a matter of a few hours, different Congressmen would pose the question and four or five times an Air Force officer would patiently explain.

Then, late in the day, one of the politicos who had been off somewhere mending fences would pop into the hearing room and the first question he would ask would be "General, what is a group?" And then, so help us, the same characters would ask the same question of a different general the following day, possibly just feeling them out to see if there was unanimity of opinion within the Air Force.

Well, sure enough it cropped up again during Gen. Hoyt S. Vandenberg's testimony on the MacArthur case before a joint Senate investigating committee the other day. Tell us, General, in simple terms, just what is a group?

General 'Clarifies'

Well, Vandenberg was ready for them. Here is his simple answer, quoted verbatim from a transcript of the testimony:

"Roughly, without going into detail, the fighters, fighter-bomber and interceptors, which are the single-engined and in some cases two-place, mostly single-place, single-engined aircraft in a so-called group, although now we call them 'wing'—in a group is approximately 75 airplanes. In the light bomber type, which is also used for close support, interdiction and shorter-range missions, they run just short of 50 airplanes. In the medium bombers and heavy bombers—the medium bombers run roughly about 36 airplanes to a group, and the heavy bombers around 30. Now that includes in some cases in the mediums, tankers and at the present time in the very long range or very heavy groups, we have about 18 airplanes because production at this time and the indoctrination of personnel into new equipment gives us a broader base on which to work. Eventually there will be about 30."

That ought to clear it up.

How Good is Mig's Engine?

VANDENBERG tossed a bombshell into the aircraft engine industry during his testimony when he said that the Russians, in the Migoyan-15 fighter, have a better engine than any in the U. S. Industry folk were completely baffled by the statement, because it represents a new line of intelligence completely at variance to everything they had believed about Russian technology.

From the information we have been able to obtain, the statement just doesn't sound accurate. The engine in the Mig is a Russian development of the Rolls-Royce Nene, rated at about 5,800 pounds thrust. Some models of the Mig are believed to be fitted with afterburners, but since we could tack afterburners on any of our engines, the only basis for comparison is the basic thrust rating.

Thus, Vandenberg obviously couldn't have meant his comparison to include engines we now have in production, for in various stages of production we have:

The **Pratt & Whitney J-57,** rated at well over 10,000 pounds' thrust, powerful enough to fly a Boeing B-50 bomber with all four piston engines feathered, a feat which it performs daily in a flying test bed operated by P & W.

The **Allison J-35-A-23,** rated at about 9,000 pounds' thrust.

A new, unannounced model of the **General Electric J-47** which turns out about the same thrust as the -23.

The **Westinghouse J-40,** rated at 7,500 pounds.

The **Wright J-65 Sapphire,** rated at 7,250 pounds' thrust.

Several less powerful engines with more thrust than the Russian Nene.

What We Have Flying

He might have meant engines actually flying in operational aircraft but we have Pratt & Whitney's 6,250-pound J-48, itself a development of the basic Nene, and several late models of the Allison J-35 and GE J-47 which have thrust ratings equal to or better than that of the Russian Nene.

Someone advanced the possibility that he meant "superior" from the standpoint of operating efficiency, in particular fuel consumption. But Vandenberg's own statement later in his testimony contradicts that; he said that if the Migs operated from Manchurian bases the limit of their radius of operation would be about the 38th Parallel. This is considerably less of a range capability than that of our own jets, despite the fact that the Mig is a comparatively light fighter. So it would not appear that the Russian jet offers much in the way of fuel economy.

An Air Force officer suggested that Vandenberg might have meant "superior" to the engines we have operating in Korea. This would probably make the statement accurate in the strict sense, but the margin is so close that it hardly justifies the statement.

All of our jet engines in Korea have thrust ratings of more than 5,000 pounds, and the J-47's in the North American F-86 are very close to the 5,800-pound rating of the Russian Nene. At the time of this writing, the General could not be reached for a clarification, since he was still busy explaining his views to the Senators. Meanwhile, the engine industry, which had just about got itself believing it had caught up with the British in jet technology, is nursing hurt feelings.

Progress

SIGN of the times note: While thumbing through the files the other day, we chanced upon an old aircraft manufacturer's annual report for the year 1938 which offers an interesting comparison on the state of the industry then and now. Boeing Airplane Co.'s gross sales for that entire year were $3,605,542, less than the cost of one B-47 jet bomber, for which the company now has orders numbering in the hundreds.

PRODUCTION SPOTLIGHT

Boeing's Prof-Engineers: With engineers getting harder to find by the day, **Boeing Airplane Co.** has hit upon a new angle to help solve the shortage . . . the company will hire about 75 college engineering professors for the summer season. The off-season employment of the professors has a dual purpose. First, it will provide Boeing with quite a few skilled engineering man-hours, even though only for a short term. But perhaps more important are the connections boeing will make through their prof-employes. The company feels that, through them, they will establish valuable relationships with engineering colleges which will help Boeing's engineer recruiting program among new graduates.

Industry's Largest Tool: *The world's largest single piece of aircraft manufacturing equipment will soon be installed in Lockheed Aircraft Corp.'s Burbank, Calif., plant. It is a $750,000 metal drawing press, a giant 8,000-ton Birdsboro. From heavy-gauge alloys it will turn out single-piece units to replace multiple parts previously assembled by extensive riveting and joining. The major part of the press assembly was shipped by water from Philadelphia to Los Angeles. Other parts are going by rail. Shipment is expected to be completed by mid-August.*

Meanwhile, the foundation is being poured for still another record-size machine at Lockheed—a $350,000 Giddings and Lewis skin mill, the only one of its kind in the U. S. It is due to arrive at Lockheed plant any day.

A2D Subcontract for Temco: **Texas Engineering and Manufacturing Co.** has received another large piece of subcontract work—a multi-million dollar contract from **Douglas Aircraft Co.** for components of the A2D Navy turbo-prop fighter. The new order brings Temco's backlog to more than $80,000,000. Earlier Temco had received a contract from **The Glenn L. Martin Co.** to build major assemblies for the P5M Navy flying boat.

Louisville Gets GE Jet Plant: *General Electric Co. has selected Louisville, Ky., as the site of its planned $14,000,000 jet engine parts plant. The plant will hire more than 16,000 when it gets into full production.*

C of C Joins Procurement Drive: The military services are going to great lengths to get all the new companies they can into defense production through procurement clinics and other means of showing small business firms pieces of equipment they might be able to build. Now a civic group has stepped in to lend a hand with an idea which might become a great boon to industry if picked up on a nationwide basis.

The Chamber of Commerce of Greater Philadelphia has taken a new step in helping the services recruit new companies by setting up a permanent exhibit where prime contractors may exhibit their products to potential subcontractors and an information bureau where companies seeking work can get the latest in military production requirements. Known as the Business Development Center, the exhibit is patterned after the Air Force-developed procurement clinic. Other Chambers throughout Pennsylvania and New Jersey were contacted to publicize the idea.

Exhibitors display their products for a two-week period and then are replaced by a new group of prime contractors. Exhibitors included in the first two-week display, just concluded, were **Bendix Radio Division, RCA Victor Division, Commercial International Corp.** and **Philco Corp.**

Ryan Orders: *Ryan Aeronautical Co. has received orders totaling more than $3,500,000 for jet engine parts and exhaust systems from Ford, General Electric, Continental, Pratt & Whitney and Westinghouse. The company is also doing work for Boeing, Douglas and Fairchild.*

Neptune Flexible Nose Turret: **Lockheed Aircraft Corp.'s** P2V-5, latest model of the Navy Neptune patrol bomber, will have a flexible nose turret mounting two 20mm cannon. Precious models had fixed nose turrets . . . Lockheed has delivered the first L-749 Constellation to Avianca, the Colombian airline, and the second will follow shortly.

—J. J. H.

F-89 Control—Photo shows how "decelerons" at outer end of the wing trailing edge of Northrop Aircraft's F-89 all-weather interceptor, which act as ailerons in normal flight, open up to become fighter brakes in a dive.

INDUSTRY PERSONNEL

Joseph J. Schweinfurt appointed asst. general supt. in charge of production of the Wright J-65 Sapphire engine at Buick Motor Division, General Motors.

Robert L. Reagan promoted from factory general superintendent of Boeing Airplane Co.'s Seattle Division to new position of factory manager. **Charles Williams** and **Harold Abling** promoted from assistant factory general superintendents to general superintendents.

Marion L. Hicks promoted to asst. div. mgr. of Convair's Fort Worth division, replacing **D. C. Burrows**, reassigned to San Diego general offices. **Thomas J. Sullivan** suceeds Hicks as mgr. of contracts in Fort Worth.

Hicks

John Atha heads new office opened by Ryan Aeronautical in Dayton to serve the middle west. **Richard J. Offenberg** is his assistant.

Lewis K. Marshall named mgr. of Lincoln-Mercury Division gas turbine plant, in charge of production of Westinghouse J-40 jet engines for the Navy.

Ralph A. Fuhrer is new chief tool engineer at Convair's Fort Worth plant. **G. D. Higgins, Jr.**, becomes head of newly created industrial security dept.

Karl Lange named asst. to **C. W. Stacey**, operations mgr. of Goodyear Aircraft's Wingfoot Lake airship base.

Jack O'Brien, formerly with California Eastern Airways and more recently a pilot for Overseas National on the Pacific airlift, has been appointed company test pilot for The Garrett Corp. and will be chief of operations for its subsidiary, AiResearch Mfg. Co.

Photo courtesy of *The Aeroplane*, London

Trans-Atlantic Teamwork

. . . The twin-jet Canberra, being groomed to bolster our tactical air power, is a working example of British-American cooperation. Originally designed in England as a high-altitude radar bomber, its flight tests proved it to be as effective at low-level operations. Now, a night intruder version of this light jet bomber will be added to our own Air Force, built by Martin under license from English Electric Co., Ltd.

The Korean conflict has re-emphasized the importance of tactical air power in low-level support of ground troops. To this mission, the Canberra brings exceptional maneuverability at high combat speeds, and at low levels and low speeds . . . ability to whip around like a fighter and turn with the best of modern aircraft . . . ability to carry a potent, destructive wallop!

Martin AIRCRAFT

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THE GLENN L. MARTIN COMPANY, Baltimore 3, Md.

You'll find a steaming JUNGLE

——third door to your right

This sleek doorway belongs to the new plant and offices of Honeywell's Aeronautical Division. Outwardly it looks like other modern manufacturing buildings in Minneapolis.

But step into the environmental test laboratory and you'll find a chamber containing a jungle-type atmosphere of oppressive humidity and tropical fungus. Here, Honeywell Autopilots, gyros, fuel gauge components and other equipment are tested under rigid U. S. Air Force and Navy specifications for resistance to *Penicillium Luteum* and eight other fungi. Performance requirements are high—because fungus-susceptible electronic equipment is useless in many parts of the world.

The fungus chamber is just one part of Honeywell's Environmental Testing Laboratory. Others test for effects of heat, cold, vibration, salt spray, humidity, sand and dust on Honeywell equipment.

Environmental tests are just one phase of Honeywell's continuing research on aeronautical control problems. We expect not only to continue, but to expand this research program — because *automatic control* is such an important part of aviation progress. And *automatic control* is Honeywell's business.

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Aeronautical Controls

Beech's Twin-Bonanza Wins TC

. . . Scaled-Down Transport With Big-Plane Design

ON May 25, CAA granted Type Certificate 5A4 to Beech Aircraft Corp. for the Model 50 Twin-Bonanza. This is the twin-engined, six-place transport which made its initial flight on November 15, 1949, and which has since been undergoing rigid testing.

The prototype aircraft has now accumulated more than 500 hours' flight time, the second aircraft recently made its initial flight and plans are going ahead for completion of 10 units on a hand-built basis while the factory tools up for production.

While Beech's work with the Twin-Bonanza has been accompanied with a minimum of fanfare, the prototype aircraft has been shown in numerous demonstrations and already firm orders with deposits exceed projected first-year production. By the end of 1952, world conditions permitting, Beech plans to have 100 Twin-Bonanzas off the production line. List price, fly-away factory, is $44,950 on the first 100 planes.

Small Airliner

The Model 50 is truly a scaled-down transport with twin-engine reliability for all-weather, night or day operation. Some of the provisions that reflect this transport-category design thinking includes the steerable nose wheel, elimination of engine cowl flaps by use of jet pump similar to the Convair Liner's, use of red instrument lighting, fuel indicator panel which visually relates fuel valve settings to fuel system plumbing, retractable assist step for passengers, use of single-disc, self-adjusting brakes, sealed-beam landing lights and a combustion-type cabin heating system.

Gross weight of the Twin-Bonanza is 5,500 pounds with the 3,785-pound empty weight, including about 70 pounds for communication equipment. In addition to comfortable seating for six people, in two rows of seats, the Model 50 provides 55 cubic feet of cargo storage area with 560 pounds' capacity. Large access doors (21½ x 19¾ inches for the 14-cu. ft. front compartment and 26½ x 26¾ inches for the 41-cu. ft. rear compartment) insure that the space provided is usable. Ready access into the larger compartment can be had from within the cabin.

Beechcraft Twin-Bonanza Model 50

Span	45' 3⅞"
Length	31' 6½"
Height	11' 4"
Gross Weight, lbs.	5,500
Empty Weight, lbs.	3,785
Engines (2)	Lycoming GO435-C2
Engine T. O. Horse Power (each)	260
Maximum Speed, sea level m.p.h.	198
Cruising Speed (65% power), m.p.h.	191
Rate of Climb, sea level, r.p.m.	1,450

Engines in the Twin-Bonanza are 260-horsepower Lycoming GO 435-C2, six-cylinder, horizontally opposed engines rated for 240 maximum cruise horsepower. Although the engine uses a wet-sump oil system, with a three-gallon oil capacity, an external oil cooler with thermostatic regulator is provided. This frees the pilot of manually operating oil cooler controls. Carburetion provided by a Bendix PS-5BD pressure carburetor minimizes the possibility of engine icing. An alternate air source, within the engine cowling, further guards against icing hazards.

Jet Assist

Normally an engine installation of this nature would use manually controlled cowl flaps requiring pilot attention and presenting maintenance problems. This is eliminated in the Model 50 by a jet augmentation system which adds some thrust to engine operation and provides a pumping action which controls air flow around the engine for cooling. Because engine exhaust controls this pumping action it increases with increases in engine power thus automatically providing for heat dissipation in direct relationship to engine requirements.

The Beech B200-116 **constant-speed propellers** used with the Lycoming engines are basically the same performance-proved props used on the

Model 35 Bonanaza, but the airfoil shape has been modified to best suit the newer aircraft. Full-feathering propellers to provide improved single-engine performance are available at a cost of about $4,000 over the basic plane price. The full-feathering props are operated by reversing the throttle beyond fixed stops with an electric feathering pump providing for four-second feathering.

The fuel system control panel is mounted on the left fuselage sidewall and provides a simple method of visually checking control movements in relation to system arrangement. This is a safety feature which minimizes the possibility of mistaken positioning of the fuel controls. It resembles the system used on the Boeing Stratocruisers in operational simplicity.

Most of the Twin-Bonanza's **systems are electrically operated** with only the wheel brakes using hydraulic power. The brakes are Goodyear single-disc brakes using rudder-toe-pedal-operated master cylinders rather than a central hydraulic system. Electrical operation includes the landing gear and wing flaps. The jackscrew-type gear actuator, through mechanical linkage, is used to operate the landing gear doors as well as the gear proper and the retractable assist steps for passenger loading. Emergency extension of the gear is provided for but an additional safety factor is represented by wheel retraction which leaves part of wheel extended below the nacelle. This feature may be compared with the Douglas DC-3 design.

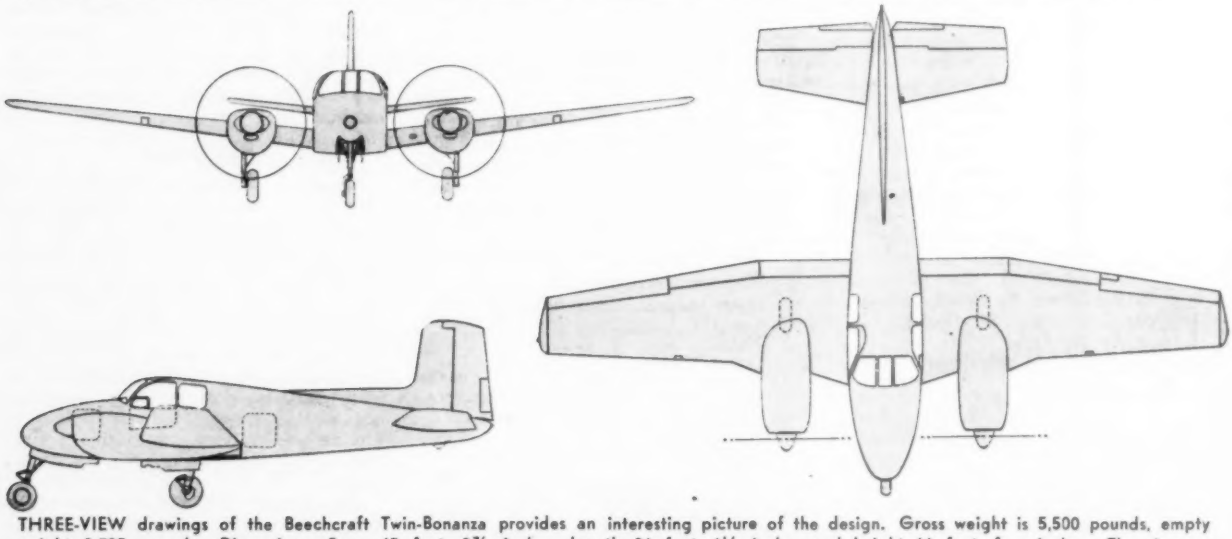
Nose-wheel steering, by direct mechanical connection with the rudder pedals, makes it possible to steer the wheel 15 degrees either side of the centerline and by brake and throttle operation this can be extended to 30 degrees. Safety provisions are incorporated to insure that the wheel will not turn once retracted and will be properly aligned on landing.

INSTRUMENTATION of the Twin Bonanza includes full set of gyro instruments and a stall warning indicator. All dial markings on the instruments are fluorescent coated. Entire main panel is shock mounted and tilts forward 10 degrees for easy viewing.

Simple switch-type controls are used for **gear and flap operation.** Mechanical stops prevent inadvertent retraction of the gear or extension of the flaps. Gear warning provisions, similar to larger transport aircraft, include both signal lights and warning horn. Horn operation is only in the event the throttle is retarded while the gear is still retracted.

Some of the other interesting features of the Twin-Bonanza:

- Electrically operated pitot tube deicing.
- Dual 28-volt generators for the electrical system plus reverse-current relays and carbon-pile voltage regulators.
- Full set of gyro instruments and two engine-driven vacuum pumps.
- Thick Fibreglass and asphalt soundproofing.
- Provisions for a radio compass loop within the tail cone and anti-servo operated elevator trim tabs.



THREE-VIEW drawings of the Beechcraft Twin-Bonanza provides an interesting picture of the design. Gross weight is 5,500 pounds, empty weight 3,785 pounds. Dimensions: Span 45 feet, 3⅞ inches, length 31 feet, 6½ inches and height 11 feet, four inches. The six passenger Model 50 also provides space for 55 cubic feet of cargo.

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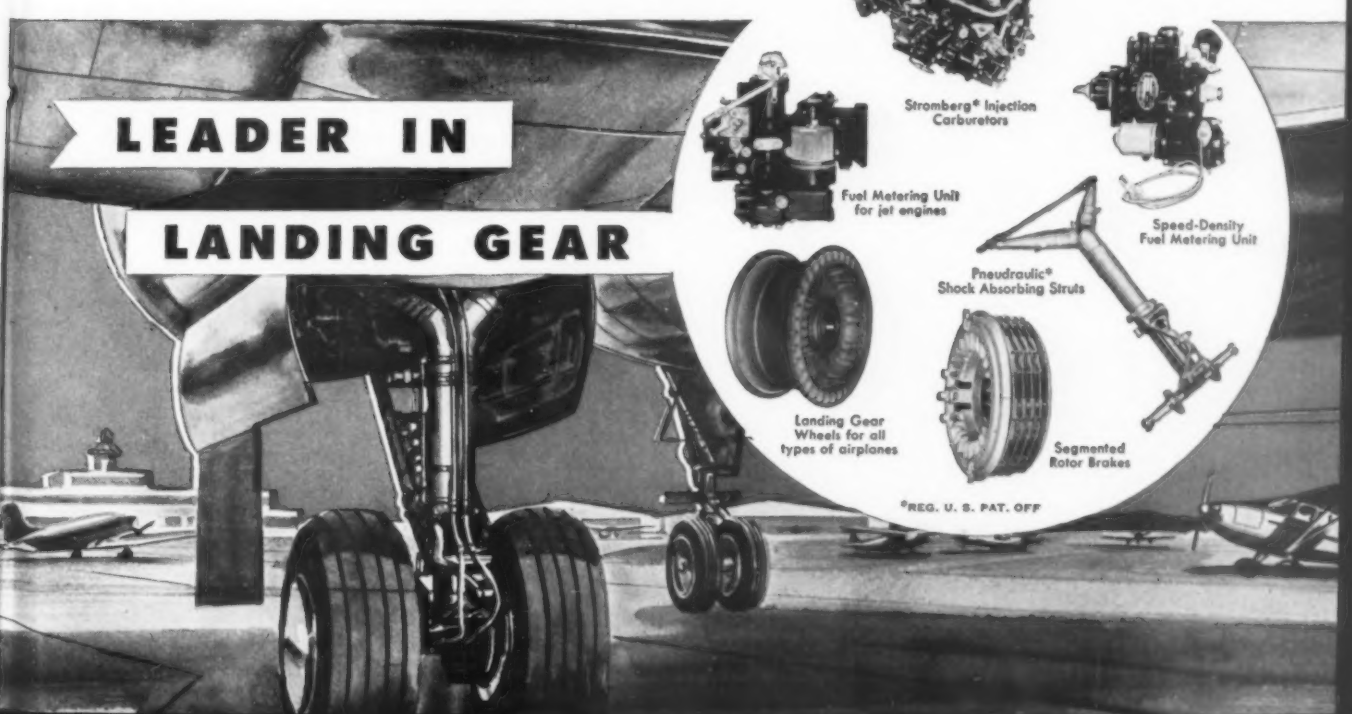
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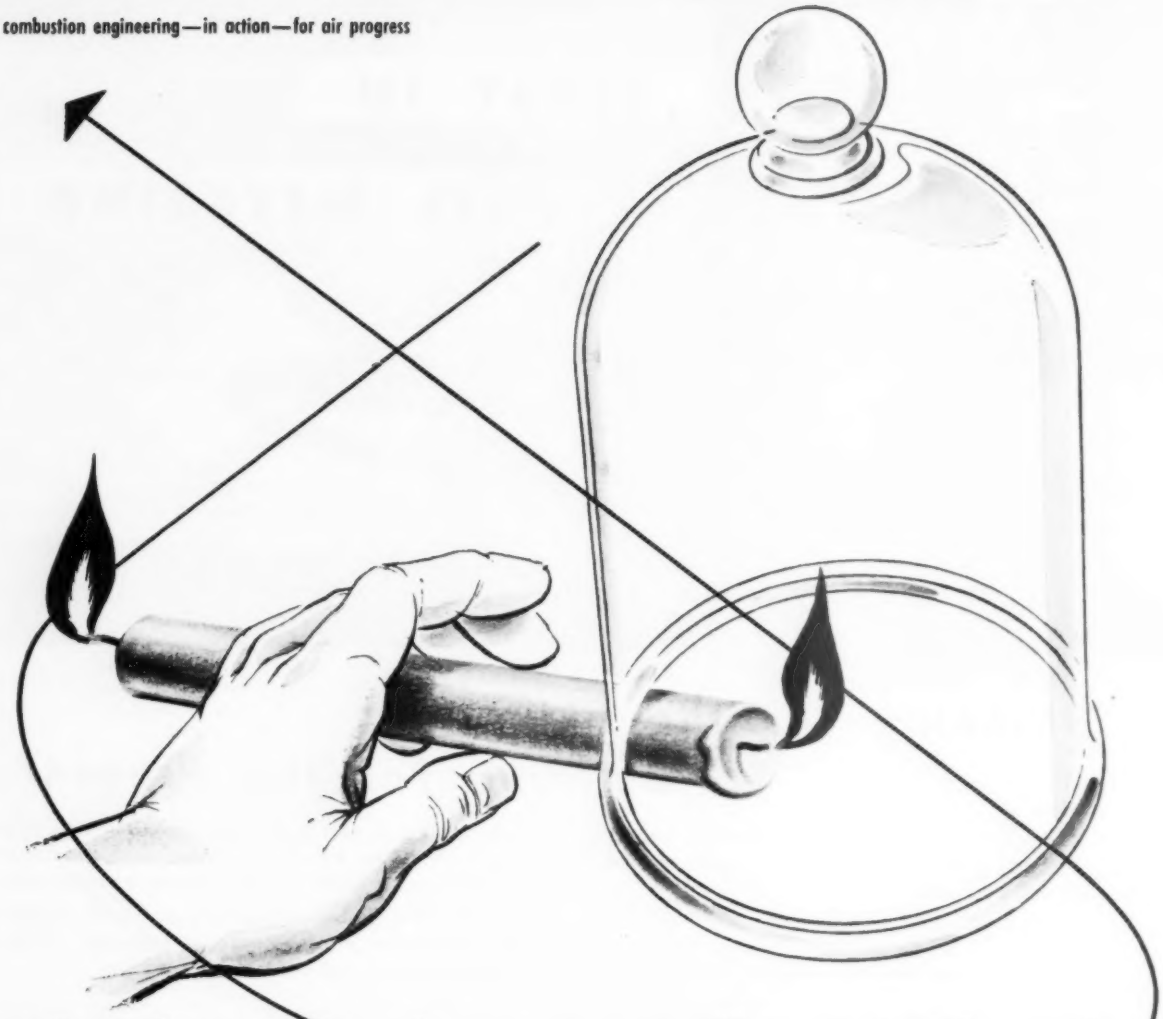

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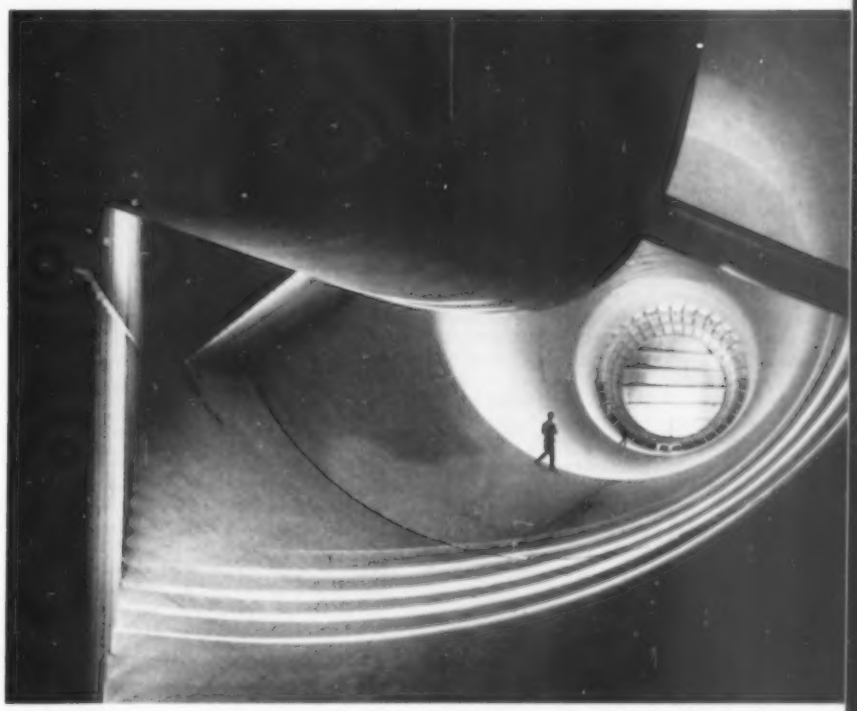
NACA's High-Speed Research Program

By WILLIAM D. PERREAULT

SOLUTIONS to many of the problems confronting the aircraft, engine and propeller designer in the transonic speed range, between Mach .95 and 1.2, will be greatly accelerated by new research tools and testing procedures now in use by the National Advisory Committee for Aeronautics.

Some 1800 representatives of the civil and military aircraft industry and leaders in the government had an opportunity to review these advancements last month during NACA's biennial inspection tour of the Langley Aeronautical Laboratory near Hampton, Va.



MAJOR STEP in research in the transonic speed range is represented in this 16-foot wind tunnel at NACA's Langley Aeronautical Laboratory. Originally a "simple" high speed tunnel, the design has now been modified to accommodate test quality air flow from zero speed up to Mach 1.4. Previously tunnel operation in the .95 to 1.2 Mach range was impossible.

Others, primarily a small group of press representatives, were privileged to visit NACA's Wallops Island (Va.) pilotless aircraft testing base in the first public inspection of these facilities where, during the past six years, NACA has fired some 1500 rocket-powered research models.

IN THEIR 10- to 15-second operational life these rocket-powered research models, used at NACA's pilotless aircraft research station on Wallops Island, Va., soar to altitudes up to 150,000 feet, reach speeds up to 3,000 miles per hour. Compact telemetering equipment buried in the fuselage sends back vital data on operational characteristics.

First Transonic Tunnel

Principal disclosure made during the inspection was the successful development of a transonic wind tunnel. For years science has been blocked in its effort to get information on aerodynamic characteristics and related control problems in the speed range around the speed of sound. At this point, when subsonic and supersonic airflows are intermixed, wind tunnels have proved ineffective.

Stable air flow suitable for wind tunnel investigations was rendered impossible by "choking" in the throat of the tunnel. Choking was caused by the formation of compression shock waves across the throat section. This wind tunnel limitation existed despite the fact that subsonic and hypersonic tunnels, capable of simulating flow conditions in excess of 17 times the speed of sound, were in operation.

NACA is not admitting how this successful transonic tunnel was developed except to comment that it was a simple solution as finally adopted. The design was such that existing tunnels could be converted to cover the new range. Two large transonic tunnels, a 16-foot and an

eight-foot tunnel, "as well as smaller ones" are now in operation.

Ventilating the Throat

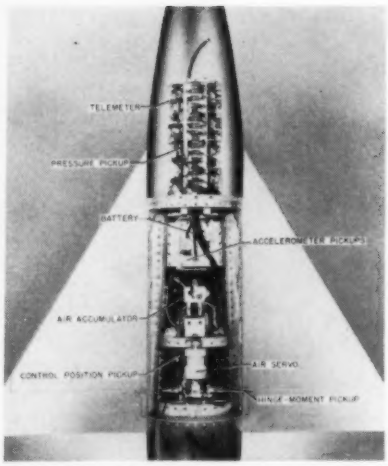
While unwilling to discuss details of the transonic tunnel design, NACA has said that the secret lies in the manner in which the test section is ventilated. Many methods of ventilating the throat section to prevent choking had been tried unsuccessfully before a suitable method was developed.

The transonic tunnels require considerably more power than the regular high-speed tunnels. In the case of the 16-foot tunnel, power to drive the air generating fans was raised from 16,000 to 60,000 horsepower. This is provided by two 30,000-hp motors driving contra-rotating fans which operate at 95% efficiency. The 45,000-kilowatt power consumption of these motors force NACA to confine its operation to the night hours when industrial requirements are low.

No small part of the transonic tunnel's operating time at present is spent in testing high-power propellers for turboprop applications in transonic aircraft. For this purpose (see photo) a special 6,000 horsepower dynamometer has been developed which can be fitted within the 16-foot tunnel for test work.

Rocket Models

NACA has used several prominent methods of overcoming the wind tunnel's shortcomings in the transonic speed range, including the use of free-falling research models dropped from high-flying aircraft and mounting of test sections in the supersonic flow over a wing which itself was



SOME IDEA of the airborne equipment used to control the flight of pilotless aircraft and telemeter pertinent data to special ground equipment is shown in this NACA cutaway photo of a delta-wing research model. Other models use spinsondes to measure rotational movement of the model, wing balances to measure lift, etc.

traveling at subsonic speeds. Most spectacular and effective of the methods was that of rocket-powered pilotless research models. For six years NACA has been using this method to obtain detailed data on both transonic and high supersonic speeds.

The rocket-powered research models often look like fighter aircraft designs (see photo.) All types of wings and control surfaces—swept back wings, delta wings, tailless designs, etc.—are fitted to long, thin fuselages used to carry the required instrumentation and measuring devices. Either within the model's body, or fitted externally as a booster, is mounted a 3½-, 5- or 6½-inch rocket.

These rockets range in weight from 27 pounds for the smaller units to 150 pounds for the largest and range in thrust output from 1700 pounds' thrust for one second to 5700 pounds for 3.5 seconds. A 150-pound rocket includes some 100 pounds of fuel—normally nitroglycerine or nitrocellulose. Sometimes as many as three rockets are used to launch one model, one inside the model and two externally used as boosters. This is the power arrangement used to push the rockets up to speeds of 3,000 miles per hour and to altitudes of 100,000 to 150,000 feet.

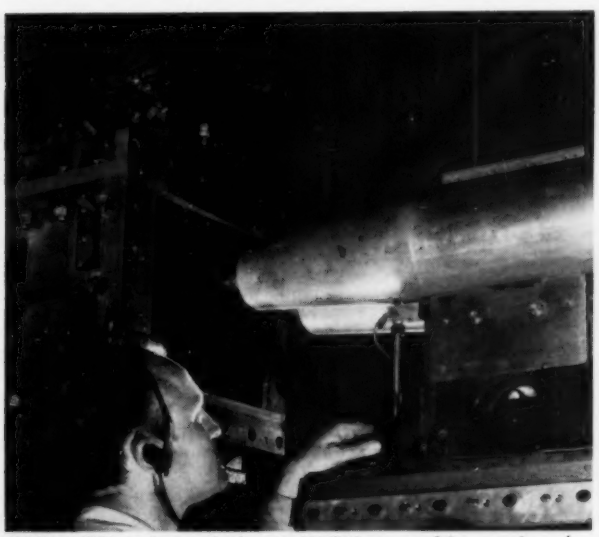
3000 Man-hours . . .

It takes some 3,000 man-hours and untold sums of money to produce a research model. When completed it will range from six to 10 feet in length, weigh 75-250 pounds. Inside its body (see cut) complex electronic equipment to measure roll, pitch, acceleration, lift, drag, attitude, angle of attack and many other parameters of interest will be housed.

. . . for a 15-Second Flight

Yet once the model is launched its operating life ranges from seven to 15 seconds.

Much of the work of sequencing rocket firing activities has been mechanized. Elaborate equipment on the ground is tuned to receive intelligence transmitted from the airborne unit by telemetering equipment inside the model. Electrical signals are translated into visual signals on the face of a cathode ray tube and



SPECIALIZER tools are the key to NACA's successful research work. Shown here are two such tools: An air generating system (left) that provides supersonic air flow for ground-test operation of a ram-jet engine used in some of the Wallops Island tests, and (right) a 6,000-horsepower propeller dynamometer which fits in the transonic wind tunnel, opening new fields of research in propeller design.

photographic equipment, started and stopped automatically by sequencing controls, records the signals for the long, painstaking process of interpretation.

As many as 12 channels are available in the model for transmitting vital statistics to the ground. In a typical test NACA will obtain figures on lift due to angle of attack, lift due to control deflection, drag at zero lift and that due to lift, static stability, control effectiveness, elevator deflection for trim, dampening in pitch, hinge moment due to pitch, etc.

All this in some 10 seconds. The model has climbed to about 100,000 feet altitude, traveled 20 miles out over the Atlantic. Seconds later it is in the ocean, never to be recovered, but having contributed substantially to the aircraft design of tomorrow—possibly to improvements in designs already flying over Korea.

Ram-Jet Check

No small part of NACA's work on Wallops Island is devoted to flight testing of pilotless aircraft powered by ram-jet engines. Here NACA is particularly non-committal. One of the interesting research tools exhibited at Langley Aeronautical Laboratory was a device (see photo) which produces supersonic air flows in which the ram-jets can be tested on the ground prior to installation in the research aircraft.

Unofficially it was learned that these full-scale ram-jets are being tested to determine suitable air inlet designs, optimum altitudes at which ram-jets should operate, the fuel-altitude relationship, ignition problems, considerations relating to heat generated at the high speeds reached by these models, etc.

NACA is using a petroleum based fuel, unlike those now in use in either piston or turbine engines. In the Mach 2 speed range at which these ram jets are operating, 80,000 to 90,000-foot altitude appears to be the best for optimum engine performance but best operating altitude increases rapidly with increasing speed.

In reality it is impossible to record the scope of NACA's research efforts, even those within one of its three principal laboratories. Research is today largely devoted to highly classified industry-sponsored projects with immediate bearing on the national defense picture.

Result is that the scope extends clear across the industry's activity. Much work is being done with helicopter stability and control, the noise problem, gust research, engine air inlets, high-lift devices including boundary layer control and new types of primary controls for high speed aircraft.

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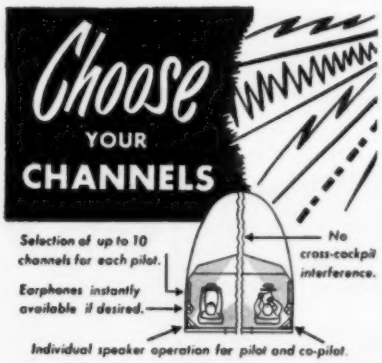
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TECHNICAL NEWS DIGEST

• **First of Mid-Continent Airlines'** modernized DC-3's has been placed in service and plans are going ahead for the conversion of all 23 planes in the fleet at a cost, including purchase of four additional planes, of $625,000. Schedule calls for completing four more planes within 60 days. Seating capacity is being upped to 24 passengers, two windows are being added up front and a step-type door being added.

• **First class of 100 new Pratt & Whitney employes** started training at P&W's new machine training school in Hartford with schedules arranged around the clock. At its peak the school is expected to handle 600 trainees.

• **One-third reduction in weight** of bullet-sealing fuel tanks now in use in jet fighters and bombers, over comparable cells in World War II aircraft, has been made possible by improved construction and manufacturing processes, B. F. Goodrich has announced. Even so the current cells in some large planes weigh more than a ton.

• **Robinson Airlines is using facsimile weather maps,** broadcast by the Times Facsimile Corp. in New York City, to provide complete weather maps of the entire U. S. without drawing them from coded information. Once a day the system also provides a 12-hour advance forecast of the weather outlook.

• **The high-altitude engine test facility** at Arnold Engineering Development Center, Tullahoma, Tenn., scheduled for shakedown tests in early 1952, is now under way. This $16 million facility, which will require 75,000 horespower to operate, will have a testing capacity six to eight times that of equipment available at Wright-Patterson Field, Dayton, Ohio.

• **"Unwanted reversal of the right propeller during flight"** has been cited by CAB as the probable cause of the Northwest Airlines accident at Almelund, Minn. on Oct. 13, 1950. The Martin 2-0-2 aircraft, being used on a six-month instrument competency check flight, was found to have a malfunctioning fuel feed valve which CAB felt might have caused engine malfunctioning and the feathering sequences which put the blades in reverse pitch and "as a result of which the crew was unable to maintain control of the aircraft."

• **Pan American-Grace Airways** has been awarded the Inter American Safety Council's Aviation Award for its perfect safety record during 1950. In its seventh consecutive year of operations in Latin America without a mishap, Panagra accumulated 113,838,000 passenger-miles and 6,048,458 plane-miles over a 7,488-mile route structure.

• **"The Role of the Sciences in Navigation"** is the theme of the Seventh Annual Meeting of the Institute of Navigation June 28, 29 and 30 in New York City at the New Yorker Hotel.

• **Seven new Daniel and Florence Guggenheim** Jet Propulsion Fellows have been appointed to carry out programs of advanced study and pioneering research at the jet propulsion centers established by the Guggenheim Foundation at Princeton University and California Institute of Technology.

• **New weight standards for passengers** and crew members in airline operations have been proposed by CAA: summer passenger weight 160 pounds, winter passenger weight 165 pounds, children between 3 and 12 years 80 pounds, male cabin attendants 150 pounds, female cabin attendants 130 pounds, all other crew members 170 pounds. Regulation would emphasize operator responsibility for insuring that use of standard weights did not result in operations at weights above legal limits.

• **Reduction in injuries to passengers** during crashes by four basic methods has been recommended by the Airworthiness Division of ICAO: increasing strength of seats to withstand 9 G's instead of present six, reversing seats to face rear of aircraft, use of forward facing seats with more adequate spacing, and use of a suitably designed shoulder harness.

4 Major Improvements

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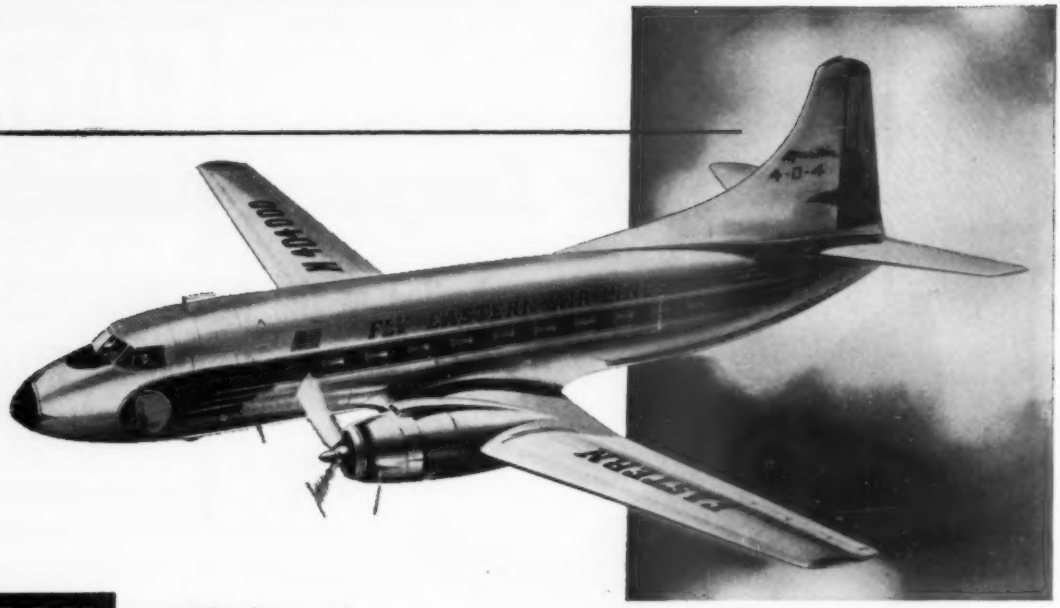

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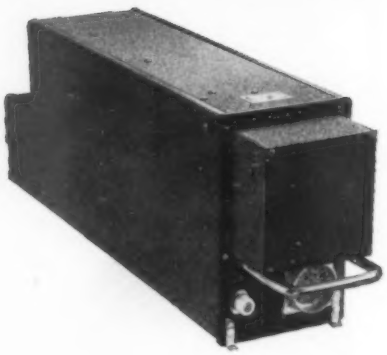

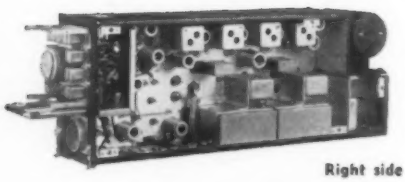

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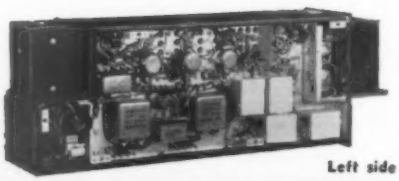

Left side

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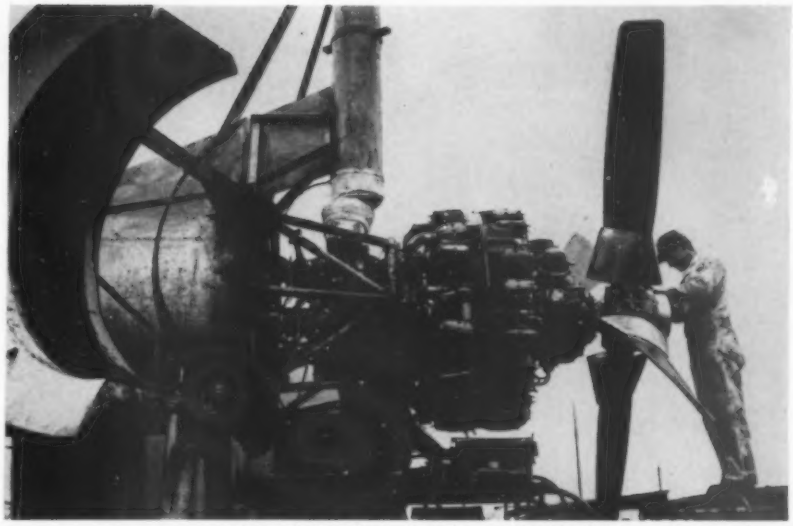
ELECTRIC COMPANY
KANSAS CITY 1, MISSOURI, U. S. A.

AMONG THE SUPPLIERS

Collins Radio Co. will spend more than $2,000,000 on expansion of plants at Cedar Rapids, Iowa, Burbank, Calif., and Dallas, Tex. . . . **Jay E. Browder** has been appointed chief of the Radio Communications Engineering Section of **Kollsman Instrument Corp.** . . . **Cherry Rivet Co.** has purchased a 10-acre tract 15 miles east of Los Angeles and will build a plant there . . . **Fredric Rosenthal** has been named to head **Flexible Tubing Corp.'s** new Inflatable Production Division.

Browder

General Electric Co. has named four new managers at its Lockland, Ohio, jet engine plant. **George I. Zimmerman** is now manager of the assembly division; **Paul Nichols**, manager of development manufacturing division; **A. W. Jacobsen**, manager of parts division and **Marc A. DeFerranti** is manager of facilities . . . **Ralph H. LeBow** has joined the **Parker Appliance Co.** as staff engineer for aircraft fuel system components . . . **William C. Rohan** will continue as president and general manager of **Quipco Associates, Inc.**, despite the firm having been purchased by **Air Carrier Service Corp.** . . . **Myron B. Gordon**, formerly an officer and director of Curtiss-Wright, Wright Aeronautical and Fairchild Engine and Airplane Corps., has been elected to the **Air Associates** board of directors.

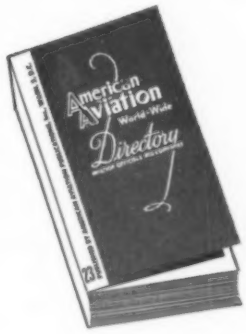


Airwork's First—First of the Pratt & Whitney R-2800 CB16 engines to be overhauled by Airwork Corp. at Millville, N. J., is shown here being prepared for test. Airwork has a contract with Trans World Airlines to overhaul the CB-16's which power its Martin 2-0-2's and will power the 4-0-4's.

Daily Plane Utilization
Domestic

		Jan.	Feb.
American	2 eng. pass.	4:46	4:39
	cargo	4:34	5:04
	4 eng. pass.	9:04	9:11
Braniff	2 eng. pass.	7:02	7:12
	4 eng. pass.	7:52	8:05
	cargo	7:43	6:46
Capital	2 eng. pass.	6:19	6:29
	4 eng. pass.	6:56	6:45
	cargo	5:29	4:57
Caribbean	2 eng. pass.	3:43	4:26
C & S	2 eng. pass.	8:18	*
	4 eng. pass.	7:16	*
Colonial	2 eng. pass.	5:58	5:54
	4 eng. pass.	5:14	5:14
Continental	2 eng. pass.	6:43	6:50
Delta	2 eng. pass.	6:52	6:56
	4 eng. pass.	8:05	8:22
	cargo	6:46	7:51
Eastern	2 eng. pass.	8:47	8:08
	4 eng. pass.	9:31	9:45
	cargo	2:24	2:59
Hawaiian	2 eng. pass.	4:19	4:05
	cargo	2:37	2:32
Inland	2 eng. pass.	10:44	10:33
	4 eng. pass.	6:54	6:36
MCA	2 eng. pass.	6:11	5:39
National	2 eng. pass.	6:18	7:01
	4 eng. pass.	10:05	10:53
	cargo	3:07	4:43
Northeast	2 eng. pass.	5:23	5:45
Northwest	2 eng. pass.	4:50	2:43
	4 eng. pass.	7:40	5:37
	cargo	2:23	3:39
Trans Pac.	2 eng. pass.	3:16	3:17
TWA	2 eng. pass.	5:04	4:43
	4 eng. pass.	7:35	7:20
	cargo	4:31	4:49
United	2 eng. pass.	5:23	5:16
	4 eng. pass.	7:31	7:25
	cargo	3:29	4:03
Western	2 eng. pass.	6:16	6:33
	4 eng. pass.	5:15	6:59

* Information not available.



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Spring-Summer—1951

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2 in 1

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Extra Section

By William D. Perreault

WE'RE ALWAYS pleased to report new developments that show promise of contributing to aviation safety. We think the recent appointment of **Howard Warzyn,** formerly of American Airlines, to the position of senior engineer with the National Safety Council is such a development. Warzyn has had some diversified experience in the aviation industry—in operations, maintenance and passenger service. His intimate knowledge of these fields should prove useful in his new position as staff representative for the air transport section in guiding the NSC's work.

•

Concerning safety, the National Safety Council is now circulating a booklet called "Safety Pays the Smaller Business." It's part of the NSC's attempt to convince small business that accident prevention pays off. Many of the airlines are in the category discussed and could well profit from the information and guidance offered. Initial distribution will be through insurance companies but single copies will be available from NSC, 425 N. Michigan Ave., Chicago 11, Ill.

•

One of the more interesting aspects of recent discussions of air safety is the growing realization that pilot error in itself is seldom a true cause of an aircraft accident. Pilot error, as commonly referred to, generally follows a mechanical failure in which case the pilot has been unable to follow the overly long and complex procedures which design engineers and those who establish operating procedures have created. We look forward to the day when accident reports will cite these design shortcomings alongside the human failures which follow. Unfortunately, the increasing litigation surrounding aircraft accidents may serve to make frank reports on this subject impossible.

•

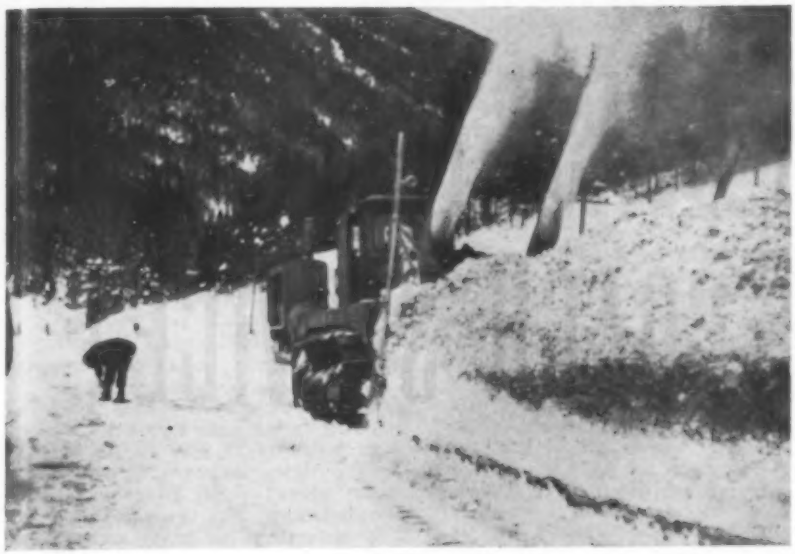
"I regard lawyers as a menace to safety." This is an interesting statement made by **Jerry Lederer,** president of the Flight Safety Foundation, on several recent occasions. He goes on to explain that no matter what you have in your files lawyers can and do subpoena those files and use the contents in legal cases which can work to the detriment of your company. Lederer cites one case in which several top operations, engineering, and maintenance people, following an accident, held a private conference in which they discussed all phases of their operation and how they might be improved to better guard against accidents. Notes were taken and a copy kept in the files. Lawyers heard of the incident, subpoenaed the files, used them against the airlines. Nothing, Jerry indicates, is sacred.

•

At periodic intervals we hear recommendations that passengers in civil aircraft should be provided with parachutes. Nobody doubts the outstanding job of life-saving accomplished by parachutes in everyday military use, but the argument regarding their possible civil use is always a heated one. (For comments on the outstanding record of the parachute in Navy use, see AMERICAN AVIATION, May 14, p. 65). It all hinges about the possible hazards of such jumps when made by untrained users.

The Navy's Lt. Commander Walton L. Jones (MC) tells of an unrehearsed ground drill conducted with a group of 27 flight engineers and orderlies who were to some extent familiar with safety equipment. Given the command to don chutes and abandon ship "as quickly as possible," the results looked like this: First man out in 2 minutes, 20 seconds, 26th man out in 4 minutes, 20 seconds, one man never got out. Twelve had their parachutes on upside down, five had harness wrong side out, several had buckles attached to the wrong components or had harnesses so loose they would have fallen out of their chutes when they opened. Following instruction and drill the group all got their gear on correctly, first man was out in eight seconds and all clear in 30 seconds.

NEW PRODUCTS



Rotary Plow Speeds Airport Snow Removal

A TRACTOR-MOUNTED rotary snow plow developed by Wm. Bros Boiler & Manufacturing Co. offers interesting possibilities for clearing snow from airport runways, taxi strips and aprons. Originally developed for the Great Northern Railroad, the unit is a special adaptation of the Bros Sno-Flyr, a standard rotary plow, which has been mounted on a Caterpillar D-7 tractor. Previously the Sno-Flyr has only been mounted on special heavy trucks or motor grader patrols.

To accomplish this installation the entire plow assembly, driving motors and supporting frames have been mounted on the D-7 as a single unit. Power to drive the unit comes from two engines mounted on a counterbalancing platform at the rear of the tractor These engines can be either diesel or gasoline engines with 200 horsepower or more to meet specific needs.

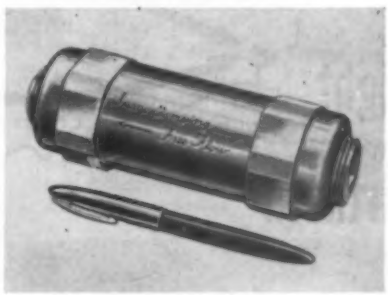
Mounted at the rear of the tractor on the special platform, the two-drive engines balance the plow assembly on the front end. For summer use of the Caterpillar D-7 tractor a crane can be used to lift the entire plow and related gear off the power unit.

Synchronization of the two engines is accomplished by a vacuum system. A 200-gallon fuel tank, mouted between the two engines, provides fuel for both units. Each engine has electric starting equipment. The crawler tractor provides maximum maneuverability plus five forward and four reverse speeds.

The Sno-Flyr plows, mounted on the crawler, feature two 360-degree revolving casting chutes, hydraulically powered and fingertip-controlled. These chutes cast snow in any direction up to 150 feet, depending on snow qualities. This is particularly handy in getting snow away from congested areas, runway boundaries, etc.

Other features include Bros dual moldboards which clear a nine-foot swath, patented slicer bars and rotating feeding rakes for slashing and chopping packed snow.

When writing **Wm. Bros Boiler & Mfg. Company,** 1057 10th Ave., S. E., Minneapolis 14, Minn., please mention AMERICAN AVIATION.



Surge Dampener

A new surge-damping valve designed to prevent shock from occurring in aircraft hydraulic systems has been developed by The Denison Engineering Co. Available in a range of sizes for wide application, the Denison surge-damping valve adjusts itself automatically to working pressures, requires only a fraction of a second to act and cannot slow down cycle time, according to the manufacturer. A normally closed valve, it gradually opens when pressure is applied to the inlet side and resets when the flow is interrupted. A spool inside the valve is normally held closed by a spring to prevent flow from inlet to outlet. It moves fully open at a rate controlled by a small valve responsive to the difference between outlet and inlet pressures. Opening rate of the Denison surge-damping valve is slower at high pressures.

When contacting James M. Gallant, **The Denison Engineering Co.,** 1160 Dublin Rd., Columbus, O., please mention AMERICAN AVIATION.

Grounding Reel

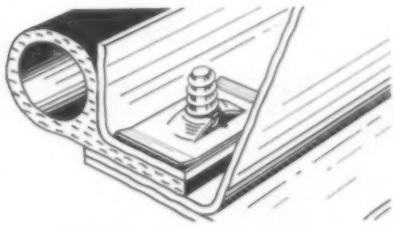
A special grounding reel equipped with 40 feet of 3/32-inch-diameter cable and housed in a cadmium - plated, rust-resisting housing is being marketed by Benjamin Reel Products, Inc. It provides uniform tension throughout the entire cable length when played out, thus keeping the cable off the ground and minimizing possibility of damaging or entangling it. Where constant tension is not desired on the cable the grounding reel can be provided with a ratchet arrangement which latches the cable at intervals.

When contacting **Benjamin Reel Products, Inc.,** 10700 Broadway, Cleveland 25, Ohio, please mention AMERICAN AVIATION.

Actuator

A torque limit actuator for positive accurate positioning with the actuator stopping when the load exceeds the rated capacity has been designed by Barber-Colman Co. Travel from a few degrees up to several hundred shaft revolutions is possible with no adjustment. Type AYLC actuators are available with a wide range of gear reductions for loads up to 500 inch-pounds. Supplied with variable mounting details, drives and with or without radio noise filters. Designed to meet all applicable AN specifications.

When contacting **Barber-Colman Co.,** Rockford, Ill. please mention AMERICAN AVIATION.



Speed Nuts

Production of flat-type aircraft speed nuts, saving as many as three manhours for 1,000 fastenings, has been announced by Tinnerman Products, Inc. Listed in NAS 446 standards for 4, 6, 8, and 10B (Z) tapping screws, the self-locking fasteners are interchangeable with AN364 and AN365 nuts on screw-driven non-structural applications. Useful in attaching harness and tube clamps, bulkhead rings, etc., the flat-type Speed Nuts provide more bearing surface and can be fastened using only finger-tip pressure to prevent nut rotation.

When contacting **Tinnerman Products, Inc., Box 6688, Dept. 14, Cleveland 1, O.** please mention AMERICAN AVIATION.

American Meets Popular Demand With...

ANOTHER COAST-TO-COAST DC-6 AIR COACH SERVICE!

New Southern Flight
VIA DALLAS

together with Northern
VIA CHICAGO

offers greater range of low-cost combination fares!

DC-6
AMERICAN'S BLUE RIBBON COACH

BECAUSE of the response to the original Blue Ribbon Air Coach, American has doubled this high-quality economy service. Now Dallas joins the list of famous cities that enjoy low-cost air travel backed by the experience of America's Leading Airline. In addition, passengers from New York and Los Angeles will have a choice of two transcontinental Blue Ribbon Air Coach flights daily.

This newest improvement in service demonstrates once again American's leadership in providing the finest transportation available at the lowest possible cost!

AMERICAN AIRLINES INC.

AMERICA'S LEADING AIRLINE

20,000 Meetings This Year:

Airlines Pushing Convention Selling as Revenue Booster

By KEITH SAUNDERS

THE LARGER domestic airlines are devoting an increasing percentage of their overall sales effort to the convention sales field with decidedly worthwhile results.

A single carrier—United Air Lines—estimates that its convention sales added up in 1950 to approximately $5,000,000 in revenues realized from flying delegates, their family members, exhibitors and miscellaneous convention-goers an estimated 87,000,000 revenue passenger-miles.

Of course, UAL is in a favorable position for this type of business, since eight of the ten most popular convention cities in the country are located on its route system. But it is safe to assume that several other carriers are in an almost equally favorable position with regard to convention sales.

These would include American Airlines and TWA, with their far-flung transcontinental route systems; Eastern and National, linking the industrial east with such popular convention cities as Miami and New Orleans; Capital, covering most of the east and midwest; and Northwest Airlines, linking Washington and New York with such points as Chicago, Minneapolis and Seattle-Portland.

Tenth of Passenger Revenue

The latter carrier, incidentally, is doing a bang-up job in convention sales with the result that such sales now account for an estimated 10% of its total passenger revenue.

Indicative of the sales potential in this field, the publication *World Convention Dates* estimates that some 20,000 conventions, expositions and conclaves will be held in the U. S. during 1951. The national emergency, instead of curtailing the number of such gatherings, seems to be resulting in more get-togethers in more places than ever before. And this means more business for the airlines that go after it, because the average convention-goer:

- Is a freer spender than the ordinary traveler.
- Is traveling on an expense account in many cases.
- Is limited in the time he can afford to spend.

Aside from this, there are always some delegates who take their wives along and make a post-convention vacation trip. For example: Delegates to conventions held in Miami frequently will hop over to Havana for a visit; conventioneers at Los Angeles like to make a side trip to San Francisco, or, in some instances, to Mexico or Honolulu.

NWA's Convention Branch

A case history in how convention sales programs are run is Northwest Airlines' convention branch, which was set up by Amos Culbert, vice president-sales, with the program and procedures being worked out by L. B. Kinports, director of passenger sales, and C. R. Hussey, manager of conventions and special assignments. Here, briefly, is how it functions:

1. Convention information is obtained from:

(a) *World Convention Dates* publication.
(b) Convention and trade shows publications.
(c) Tips from district sales offices.
(d) Newspaper stories, and
(e) Advance hotel reservations.

2. Having learned of future conventions, the manager of convention sales then requests delegate and membership lists from the executive secretaries of the various organizations. District sales offices then follow up this request by personal contact with the secretary or other convention official and:

(a) Suggests that a questionnaire be included in a mailing to the membership, with answers to be forwarded to the airline offering the best and most convenient service, and

(b) Offers an informative letter on fares and flight time for inclusion in the organization mailing.

3. Delegates are solicited for air travel in the following ways:

(a) Direct mail from the airline's general offices, including a folder highlighting special events on the convention program, a folder on the convention city, a Reply-O-Letter, and a letter from the manager of convention sales.

(b) Delegate lists are sent to district sales offices 60 to 90 days in advance of the convention for follow-up by: phone call or personal contact by district salesmen, a card or letter from the district sales manager, or referral to other airlines for interline solicitation.

(c) Color films and Kodachrome slides on convention city are shown to group meetings several weeks prior to the convention.

(d) A bulletin to all sales offices listing conventions.

(e) Reservation and information desk at convention hotel.

(f) Portable booth for setting up

Convention Booth— Rose Lodge, Capital Airlines' ticket agent, stands by ready to serve delegates attending a convention held in the nation's capital. Counter was set up by Capital in the Willard Hotel, which was convention headquarters.

NEW!

...ULTRA-MODERN AVIATION FUELING

Cities Service joins with Eastern Air Lines to inaugurate another great advance

The *Flat-Tops* are on duty now—making notable service records. With these remarkable new tank trucks, Cities Service is fueling Eastern Air Lines planes at LaGuardia, Newark, and Boston's Logan Airport. Never before has there been any approach to the safe, speedy, convenient fueling now made possible by Cities Service *Flat-Tops.*

You'll be interested in major *Flat-Top* features listed here. Each one adds evidence that Cities Service is in the forefront of aviation progress. That's why fields offering Cities Service products are winning preference today, among those eager for topnotch quality and service.

A FEW FLAT-TOP FEATURES

NO REELS . . . All hose lies flat—out of sight—on wide, flat metal grating above tank.

UTMOST SAFETY . . . Remote hydraulic drive from tractor engine, to slave pump, to high-speed fuel pump, keeps prime power far away from fuel outlets.

HINGED LADDER . . . Rises from flat position on grating; elevates and rotates as required; locks in place, with hose lifted on guide rails. No more auxiliary ladders to cause injury or damage.

SINGLE VALVE TO DE-FUEL . . . This is just one of many features for new simplicity and surety . . . for definite savings of time and labor with this extremely efficient tank truck equipment.

Cities Service Aviation Gasolenes
Cities Service Aero Oils
Cities Service Cisco Solvent Engine Cleaner
Cities Service Aero Greases
and Aviation Specialty Products

CITIES SERVICE

AVIATION PRODUCTS

New York · Chicago
In the South: Arkansas Fuel Oil Co.

in convention lobby.

(g) Special events buttons worn by the airline's ticket agents.

Sells Convention Program

Charles Hussey, NWA's convention sales manager, says his organization not only sells air travel to conventions but also tries to "sell' the convention program itself, emphasizing the various benefits of attending. This stimulation of interest in the convention pleases the executive secretary, who therefore becomes most anxious to cooperate with the airline in its solicitation of delegates and members.

Another airline with a wide-awake convention bureau is Capital, which employs many of the sales techniques used by Northwest plus some of its own concoction. This bureau, which completely covers 20 to 40 conventions a month, depending on the season, is under the supervision of V. K. Stephens, manager of interline and agency sales.

Capital's convention sales program works somewhat as follows:

Convention bulletins listing all national and some state and regional conventions to be held in cities on its route system are sent to its field offices about six months in advance, such listings containing the name of convention, date, city, attendance expected, and name of contact (usually the secretary). The contact subsequently is asked for a copy of the organization's membership or a list of registrations from the preceding year's convention. Individual members or delegates are then solicited via the usual methods, except that in the case of a large or important convention Capital uses additionally an effective direct mail campaign.

Special penny post cards developed by its advertising department are addressed in the company's general offices and then sent in bulk to the stations concerned for mailing. Capital sent out 30 such cards to 23,572 individuals in 1949, and sent 31 cards to 50,555 persons last year. These cards, incidentally, have received several awards from the Direct Mail Advertising Association.

In-Session Promotion

Another very important phase of Capital's convention program is In-Session Promotion, that is, actual contact with the delegates by local sales representatives during the convention dates. This is done by means of

. A special convention booth in the exhibit hall or near the entrance.

. Solicitation of registrants from on line cities through a special notice in their hotel mail boxes.

. Delivery via Capital of home-

Over the Counter

Sales Promotion

ALL-OUT on sales promotion as well as passenger service is **Harold Harris**, vice president-Atlantic Division of **Pan American World Airways**. He's asked division personnel: "Can we develop effective showmanship?" He points out that "we want our passengers to have a more effective introduction to the many different countries they visit. This is especially needed at passengers' intermediate stations where they may be in the country for only an hour . . . When a passenger tells others about his trip he remembers only the dramatic and interesting scenes or events . . . If the passenger is to become our 'number one salesman' we must give him much more to remember and talk about . . .

"What can you give to each passenger as a reminder or souvenir? Could we promote a free shamrock for each passenger passing through Ireland? Could we promote a sample of a well-known local product to give each passenger while he is in your country?" He asks whether passengers should be greeted in the local language when they deplane, whether a colorful native cart with PAA insignia should be used for baggage, whether there should be exhibits of native dolls or costumes in the lounge. He's asked all personnel for suggestions on how to "create a more dramatic impact on the travelling public, and to give them the interesting experiences which they will relate to friends about their Pan American journey." Sounds like a program that could pay off . . .

•

Airlines and **Post Office Dept.** are off on a big campaign to promote air parcel post. PO is urging postmasters to put on special air parcel post months, and the airlines will give prizes to the PO employes who make the best showing during that month. **Air Transport Association**, with PO blessing, has started a new publication, "ATA Flight," which is being distributed six times yearly to postmasters and supervisors. It carries interesting items about air mail service and airlines . . .

Central Airlines is using a new and different twist in its advertising and promotion. It's including the words, "U. S. Inspected." Says **John Schwarzkopf**, public relations director, "While every public carrier is of necessity inspected by some governmental agency, I think we are the first airline to capitalize on it."

All **Chicago and Southern** personnel are now carrying C&S timetables. If they're caught without one, they pay the challenging party two bits. This gimmick has been used before by other airlines very effectively. C&S went about it a little differently, drawing up an "incentive sales agreement (multilateral)". It's in the form of a resolution pointing out that "the current C&S published timetable is the most valuable single piece of sales literature available to the said party and should be carried on the person of each party at all reasonable times."

Traffic and Sales Offices

CONSOLIDATED airline ticket office serving Chicago and North Shore suburbs was to open about June 1 in Carlson Bldg., Evanston. Participating will be **American, Braniff, Capital, Delta, Eastern** and **United** . . . **American Airlines** opened new off-line sales office in Dillingham Bldg., Honolulu, with **Jack Gardner** in charge . . .

New Services

TWA on June 1 added a Constellation schedule Washington to San Francisco/Oakland with one stop at Chicago . . . TWA on same date inaugurated weekly round-trip Chicago-Detroit-Shannon-London flight and on June 5 renewed once-weekly round-trip to Rome via Detroit, Shannon, Paris and Geneva. Both will add New York as stop on the return en route to Detroit and Chicago . . .

Chicago and Southern Air Lines on June 15 starts daily Constellation service from Detroit to co-terminals of Houston and New Orleans . . . **Northwest Airlines** on June 1 added second weekly flight from U. S. to Korea (Pusan) . . . **Scandinavian Airlines System** is now operating two all-cargo flights weekly on its Atlantic route . . .

All American Airways' Washington-Atlantic City service was extended to New York June 1 with inauguration of two round-trips daily between Washington and New York via Baltimore, Dover, Atlantic City and Asbury Park . . . **Eastern Air Lines** started first through plane service Chicago-San Juan via Miami on June 1 with Constellations . . . **Western Air Lines** starts seasonal service to Jackson, Wyo., on June 16, one round-trip daily . . .

Flying Tiger Line has set up a customer service bureau in its Los Angeles office to handle traffic inquiries formerly handled by operations department, and to develop air freight prospects through telephone solicitation. If experiment continues to be successful, it will probably be extended to other major stations.

—ERIC BRAMLEY

TWA
ONLY TWA TAKES YOU ALL THE WAY
ONE-AIRLINE SERVICE
TO THE CAPITALS OF EUROPE
FROM 60 U. S. CITIES
58 transatlantic flights weekly with the world's largest Constellation fleet.
SEE YOUR TRAVEL AGENT or call
Trans World Airlines
Across the U.S. and overseas... you can depend on TWA

town newspapers to the delegates.

4. Distribution of Capital promotional material in the meeting halls in lobby of hotel.

5. Placing Capital signs and posters on registration desks and in other conspicuous locations.

Capital reports that it also has had considerable success in promoting special charter flights for groups bound for large gatherings, such as a Shrine or American Legion national convention.

According to L. P. Marechal, director of passenger sales for Trans World Airlines, TWA has organized an intensive program to handle convention sales and last year had a revenue of $460,000 directly traceable to such sales. Marechal estimates, however, that the traceable revenues represents only a fraction of the total convention sales revenue.

He said TWA's known convention revenue (domestic) for 1950 showed an increase of 27% over that of 1949, and convention sales are expected to show further increases.

United Air Line's convention bureau, which virtually went into "cold storage" during the last war, was reactivated in 1946 and scored such annual sales gains that it recently was expanded, with J. M. Klapp being named manager of convention travel, a newly created post, and M. M. Matthews being named superintendent of convention sales.

Other airlines are making similar expansions as the dollar potentials of convention sales gain increasing recognition.

CAB CALENDAR

June 12—(Docket 4902) Prehearing conference in investigation of Consolidated Flower Shipments, Inc.—Bay Area. 10 a. m., Room E-210, Temp. Bldg. 5, Washington. Examiner Richard A. Walsh.

June 18—(Docket 2849 et al. & 3663) Hearing in Big Four Mail Rate and Efficiency Investigation. 10 a. m., Adams & Hamilton Room, Wardman Park Hotel, Washington. Examiner Edward T. Stodola. Postponed from June 4.

June 19—(Docket 3941) Hearing in Robin Airlines Individual Exemption Case. Tentative. Examiner Curtis C. Henderson.

June 26—(Docket 2936) Hearing on application of Braniff Airways to serve Tulsa, Okla., on Route 9. Tentative. Examiner Paul N. Pfeiffer. Postponed from June 12.

July 9—(Docket 4852 et al.) Hearing in Empire Air Lines Certificate Renewal Case. Tentative. Examiner Warren E. Baker. Postponed from June 13.

Aug. 13—(Docket 4762 et al.) Hearing in Piedmont Aviation Company Certificate Renewal Case. Tentative. Examiner Ferdinand D. Moran.

Sept. 18—(Docket 4059 et al.) Hearing in CAB investigation of airline tariff liability rules. Tentative. Examiner R. Vernon Radcliffe. Postponed from June 18.

Oct. 1—(Docket 4542) Hearing in Western Air Lines Salt Lake City-Rapid City Route Case. Tentative. Examiner William J. Madden.

DESIGNERS AND BUILDERS OF PRODUCTS FOR PRECISION INDUSTRIES 'ROUND THE WORLD

AUTOMATIC PILOT AND FLIGHT PATH CONTROL EQUIPMENT

AIRPLANE AND ENGINE INSTRUMENTS

AUTOSYN* AND MAGNESYN* REMOTE INDICATING SYSTEMS FOR:

- Fuel Flow
- Fuel Pressure
- Hydraulic Pressure
- Liquid Level
- Manifold Pressure
- Oil Pressure
- Position
- Temperature
- Torque Pressure
- Water Pressure

Fuel Flow Totalizing Systems
Manifold Pressure Gauges
Electric Tachometer Systems
Warning Units

FLIGHT AND NAVIGATION INSTRUMENTS

Accelerometers
Airspeed Indicators
Attitude Horizon Indicators
Dual Radio and Magnetic Compass Indicators
Gyro Flux Gate* Compasses
Magnetic Compasses
Rate of Climb Indicators
Turn and Bank Indicators
ODR Components

POWER SUPPLY EQUIPMENT

Alternators
Control Panels
Fault Protection Systems
Generators
Inverters
Line Relays
Overvoltage Protectors
Reverse Current Cutouts
Voltage Booster Dynamotors
Voltage Regulators
Power Failure Indicators

AIR PRESSURIZATION AND ICE ELIMINATION EQUIPMENT

Electronic and Mechanical De-Icer System Timers
Oil Separators
Pumps
Valves
Pressurization and Control Units

ENGINE STARTING EQUIPMENT

Booster Coils
Induction Vibrators
Relay Switches
Starters

ENGINE CONTROLS

Automatic Engine Power Controls
Automatic Engine Boost Controls

MISCELLANEOUS

Actuators—Linear and Rotary
Differential Pressure Switches
Oxygen Regulators
Gear Boxes
Flexible Drive Shafts
Turbine Power Supplies

SPECIAL PURPOSE ELECTRON TUBES

Amplifier Tubes
Counter Tubes
Gas-Filled Control Tubes
Klystron Tubes
Rectifier Tubes
Spark Gaps
Temperature Tubes
Voltage Regulator Tubes

PRECISION COMPONENTS FOR SERVOMECHANISM AND COMPUTING EQUIPMENT

Autosyn Synchros (Transmitters, Receivers, Differentials, Control Transformers, and Resolvers)
Amplifiers
Low Inertia Motors
Servo Motors and Systems
Transformers
Gyros
Rate Generators
Stabilization Equipment
Remote Controls and Indicating Systems

FOUNDRY PRODUCTS

Sand, Permanent Mold, and Die Castings of Magnesium and Aluminum, for a wide variety of Aircraft and Industrial Applications. Non-Ferrous Precision Plaster Mold Castings.

*REGISTERED TRADEMARK OF BENDIX AVIATION CORPORATION

ECLIPSE-PIONEER DIVISION OF Bendix AVIATION CORPORATION

TETERBORO, NEW JERSEY

Export Sales: Bendix International Division, 72 Fifth Avenue, New York 11, New York

1950 AIRLINE SALARIES

Following are 1950 airline salaries as reported to CAB:

Pan American-Grace Airways

Andrew B. Shea, pres. and dir., no salary; **Howard L. Clark,** v.p. and dir., no salary; **Erwin Balluder,** v.p. and dir., no salary; **Douglas Campbell,** v.p. and gen. mgr., $22,500 salary, $8,000 bonus and indirect compensation; **G. Vidal,** v.p. and comptroller (resigned 11/30/50), $18,333 salary (down $1,667), $6,000 bonus and indir.; **T. J. Kirkland,** v.p., $19,500, $4,000 bonus and indir.; **J. T. Shannon,** v.p., $17,500, $3,250 bonus and indir.; **K. A. Lawder,** v.p. and comptroller, $7,768, $500 bonus and indir.; **W. F. Cogswell,** secy., no salary; **J. S. Woodbridge,** treas., no salary; **H. Preston Morris,** asst. secy., no salary; **A. J. Phelan,** asst. comptroller, $9,250, $1,000 bonus and indir.; **E. E. Spencer,** asst. treas., $9,250, $1,000 bonus and indir.; **W. F. Lewis,** asst. treas., $9,479 (up $729), $1,000 bonus and indir.

National Airlines

G. T. Baker, pres. and dir., $30,000 salary (down $3,750), $6,511.22 bonus and indir.; **J. L. Morris,** v.p., $12,000 (down $750), $2,604.43 bonus and indir.; **J. D. Crane,** v.p. engineering, $12,000 (up $325.02) $2,604.49 bonus and indir.; **E. J. Kershaw,** v.p. operations-maintenance, $16,000 (down $1,000.12) $3,472.65 bonus and indir.; **Walter Sternberg,** v.p. sales, $17,916.52 (up $12,274—employed 9/6/49), $3,798.19 bonus and indir.; **R. E. Wieland,** v.p. foreign operations and dir., $9,000 (up $2,400), $1,953.38 bonus and indir.; **J. M. Rosenthal,** v.p. industrial relations, $12,000 (up $1,500.12), $2,604.49 bonus and indir.; **R. P. Foreman,** secy. and dir., $12,000 (up $1,875), $2,604.49 bonus and indir.; **J. C. Brawner,** treas. and dir., $12,000 (up $875.16), $2,604.49 bonus and indir.; **W. F. Johnston,** asst. treas., $7,050 (up $300), $1,432.49 bonus and indir.; **F. E. Howe,** asst. secy.-treas., $6,700 (down $800), $150 bonus and indir.; **T. A. Prevost,** asst. v.p., $9,766.52 (down $858.44), $208.33 bonus and indir.

U. S. Local Service Airline Revenues & Expenses, February, 1951

Airlines	Total Operating Revenues	Passenger Revenues	Mail Revenues	Express Revenues	Freight Revenues	Excess Baggage Revenues	Non-Scheduled Transport Rev.	Total Operating Expenses	Aircraft Operating Expenses	Ground & Indirect Expenses	Net Operating Income
All American	$ 201,803	$ 89,897	$ 105,368	$ 5,305	$ . . .	$ 296	$ 127	$ 262,076	$ 118,370	$ 143,706	$ -60,273
Bonanza	129,395	56,644	70,751	216	546	699	326	152,723	67,483	85,240	-23,328
Central	70,996	11,134	59,860	. . .	. . .	. . .	. . .	102,851	45,226	57,625	-31,855
Empire	77,543	26,793	49,392	833	. . .	109	460	83,417	44,950	38,467	-5,873
Frontier	269,680	80,076	182,481	1,436	4,724	84	. . .	313,121	145,820	167,301	-43,441
Lake Central	116,218	11,425	33,479	3,677	. . .	54	67,484	139,073	88,887	50,186	-22,855
MCA*	55,841	27,221	24,954	2,100	1,346	138	. . .	73,269	25,895	47,374	-17,428
Mid-West	23,318	977	22,338	. . .	. . .	. . .	5	32,140	14,479	17,661	-8,822
Ozark	62,387	12,148	48,513	1,276	. . .	63	387	138,925	57,909	81,016	-76,538
Piedmont	240,390	132,863	99,940	2,750	3,029	1,138	. . .	235,669	122,578	113,091	4,721
Pioneer	252,856	139,446	89,200	1,342	3,013	1,132	3,733	245,350	103,177	142,173	7,506
Robinson	183,252	53,344	122,096**	2,413	1,783	163	3,244	92,906	34,030**	58,876**	90,346
Southern	154,541	52,442	98,474	3,033	. . .	267	748	185,944	96,071	89,873	-31,402
Southwest	181,997	98,330	72,137	1,370	6,628	732	2,287	170,549	71,483	99,066	11,448
Trans-Texas	199,135	50,061	130,064	1,213	1,288	379	13,410	187,888	88,602	99,286	11,247
West Coast	92,240	30,469	59,260	425	1,196	82	. . .	83,759	34,625	49,134	8,482
Wiggins	21,354	1,531	19,746	. . .	. . .	14	21	23,511	9,940	13,571	-2,158
Wis. Central	114,327	22,961	89,158	1,730	. . .	163	. . .	136,001	61,757	74,244	-21,674
TOTALS	2,447,273	897,762	1,377,211	29,119	23,553	5,513	92,232	2,659,172	1,231,282	1,427,890	-211,897
					Helicopter	Mail Service					
Hel. Air Serv.	25,173	. . . .	25,173	. . .	. . .	. . .	. . .	35,096	22,809	12,287	-9,923
Los Angeles	31,011	. . . .	30,971	. . .	. . .	. . .	. . .	31,618	18,947	12,671	-607

* Figures cover feeder or local service segment awarded MCA by CAB in the Parks Air Lines Investigation Case. (Route 106)
** Includes out of period items.

U. S. Airline Balance Sheet Data as of Dec. 31, 1950

Airlines	Total Assets	Current Assets	Investments & Special Funds	Operating Prop. & Equipment	Deferred Charges	Current Liabilities	Long-Term Debt	Deferred Credits	Operating Reserves	Capital Stock	Surplus
American	$ 125,952,225	$ 36,022,190	$ 31,217,231	$ 56,197,103	$ 2,375,144	$ 23,314,388	$ 30,000,000	$ 2,307,272	$	$46,452,835	$ 23,878,731
Braniff	15,133,437	7,602,887	807,154	5,851,937	667,359	4,113,619	2,064,906	229,791	101,754	2,500,000	6,116,366
Capital	17,833,691	7,013,144	56,509	9,691,414	363,506	5,811,321	8,055,231	255,911	192,705	527,855	2,990,118
Caribbean	480,287	229,918	609	199,680	23,266	97,071	237	16,736	46,724	94,538	224,980
C & S	8,855,383	3,580,883	753,626	4,161,807	295,679	2,313,208	. . . .	184,030	300,000	4,893,645	1,164,450
Colonial	3,332,245	2,218,113	51,243	999,700	62,836	310,571	. . . .	95,873	159,921	515,600	1,750,279
Continental	4,703,474	2,648,340	10,937	1,779,395	264,752	1,562,863	700,000	50,846	28,019	336,757	1,974,989
Delta	13,238,731	5,382,209	172,931	7,418,165	265,427	3,649,449	1,425,000	273,043	140,740	1,500,000	6,245,500
Eastern	59,333,154	34,619,346	9,244,186	12,513,414	2,956,207	15,314,818	6,000,000	3,125,132	2,855,053	2,395,572	29,642,579
Hawaiian	2,602,013	1,419,301	225,909	865,812	49,089	369,646	. . . .	57,130	. . . .	1,750,000	425,237
Inland***	1,382,423	1,179,323	3,035	84,061	7,446	345,895	. . . .	52,056	. . . .	164,218	820,254
MCA	5,252,935	2,417,337	24,921	2,580,515	230,162	1,675,638	1,220,841	82,585	30,725	416,657	1,826,479
National	12,527,889	4,295,349	51,712	7,565,039	615,378	2,103,836	2,000,000	909,442	101,386	1,000,000	6,408,224
Northeast	4,728,656	1,802,269	40,127	2,734,410	143,626	688,909	. . . .	81,503	53,398	2,223,129	1,681,716
Northwest	46,774,383	13,906,855	233,037	31,169,053	1,392,026	10,213,089	14,140,363	1,102,517	. . . .	17,829,705	3,483,709
PAA System	199,838,975	80,891,355	8,379,428	85,082,162	24,924,714*	47,745,306	40,250,000	18,498,136	3,382,895	6,145,082	83,946,451
Panagra	19,230,614	13,074,685**	249,479	5,104,979	762,830	4,976,993	1,000,000	1,304,812	2,392,689	4,750,000	4,906,120
Trans Pacific	578,780	93,906	500	298,283	155,782	453,952	. . . .	16,813	14,035	923,195	-829,215
TWA	105,598,330	36,204,580	14,270,731	51,441,194	3,372,023	26,165,521	46,805,456	5,152,222	. . . .	12,136,360	15,338,771
United	107,391,145	42,166,724	2,741,070	59,267,694	2,172,682	29,049,033	21,200,000	3,195,686	. . . .	29,999,567	16,802,459
Western***	10,502,964	2,893,279	395,926	6,315,246	676,801	2,969,229	2,231,098	223,245	. . . .	525,164	4,554,228
TOTALS	765,271,734	299,661,993	68,935,301	351,321,113	42,276,785	183,654,855	177,093,182	37,219,831	9,807,044	137,129,879	213,352,485
	Figures for American Overseas Airlines as of September 25, 1950 (effective date of PAA-AOA merger)										
AOA	25,871,027	5,751,176	54,279	18,905,447	1,160,124	6,976,510	. . . .	916,349	797,604	1,749,825	15,314,969

* Includes $11,857,340 in estimated mail pay in excess of amount accrued under temporary and final rates under review.
** Includes mail pay accrued on basis of show cause order dated April 19, 1949 which accrual exceeds amount payable under temporary rate order dated April 13, 1950 by $2,071,000.
*** Operations of Western and its subsidiary, Inland, should be considered as consolidated, although reports are filed separately as shown here.

NOTE: Above tabulation includes overall balance sheet data for companies, domestic and international combined. Feederline or local service carrier data appear in a separate tabulation.

U. S. Domestic Airline Revenues & Expenses, February, 1951

Airlines	Total Operating Revenues	Passenger Revenues	Mail Revenues	Express Revenues	Freight Revenues	Excess Baggage Revenues	Non-Scheduled Transport Rev.	Total Operating Expenses	Aircraft Operating Expenses	Ground & Indirect Expenses	Net Operating Income
American	$ 9,850,104	$ 8,147,665	$ 609,826	$ 305,725	$ 533,517	$ 97,072	$ 794	$ 8,104,642	$ 3,863,505	$ 4,241,137	$ 1,745,462
Braniff	1,266,570	1,031,314	148,611	38,350	38,020	8,920	421	1,124,577	484,455	640,122	141,993
Capital	2,497,054	1,809,314	252,239	83,552	96,805	13,008	189,455	2,465,787	1,171,634	1,294,153	31,267
Caribbean	87,768	68,002	13,374	. . . .	2,071	890	1,350	74,085	31,604	42,481	13,684
C & S	731,390	532,670	106,470	12,610	19,349	5,238	2,409	774,984	323,246	451,738	-43,094
Colonial	347,390	249,731	36,129	2,555	3,466	2,356	1,892	396,157	167,832	228,325	-48,768
Continental	545,368	374,790	118,395	2,487	11,970	2,623	22,690	499,212	238,596	260,616	46,156
Delta	2,031,555	1,716,120	66,287	24,190	83,438	29,672	101,867	1,624,502	817,566	806,936	407,053
Eastern	9,556,739	7,740,030	311,564	222,936	84,094	174,419	806	6,333,035	3,417,232	2,915,803	2,223,703
Hawaiian	232,780	195,281	1,931	8,367	20,496	3,708	1,392	273,072	99,484	173,588	-40,292
Inland*	218,641	156,809	53,785	2,000	4,622	1,344	. . . .	218,846	95,629	123,217	-204
MEA**	600,725	446,904	118,529	9,144	11,867	4,013	3,691	559,148	191,358	367,790	41,578
National	2,509,010	2,216,207	129,007	17,610	80,022	54,043	855	1,559,814	692,411	867,403	949,197
Northeast	476,803	331,757	116,204	7,914	7,919	1,653	313	503,771	232,289	271,482	-26,967
Northwest	1,376,516	1,075,067	121,943	69,026	63,157	7,155	2,607	2,365,861	1,210,354	1,155,507	-989,346
Trans Pacific	66,182	51,374	. . . .	357	1,070	461	9,938	89,448	34,019	55,429	-23,266
TWA	5,393,715	4,611,219	555,413	287,675	256,183	55,100	88,033	6,291,333	3,118,791	3,172,542	-392,618
United	7,158,809	5,673,724	639,289	276,997	318,789	60,751	61,668	6,582,248	2,790,359	3,791,889	576,561
Western*	906,339	750,454	32,606	11,500	15,231	4,974	13,401	816,290	362,579	453,711	90,549
TOTALS	45,359,458	37,258,462	3,531,612	1,383,545	1,707,136	527,456	508,582	40,656,812	19,342,943	21,313,869	4,702,648

* Operations of Westerrr and its subsidiary, Inland, should be considered as consolidated, although reports are filed separately as shown here.
** Figures do not include operations of feeder segment (route 106) awarded MEA by CAB in the Parks Air Lines Investigation Case. Figures for route 106 are carried separately on local service airlines summary sheets.

U. S. International Airline Revenues & Expenses, Oct.-Dec., 1950

Airlines	Total Operating Revenues	Passenger Revenues	U. S. Mail Revenues	Foreign Mail Revenues	Express Revenues	Freight Revenues	Excess Baggage Revenues	Non-Scheduled Transport Rev.	Total Operating Expenses	Aircraft Operating Expenses	Ground & Indirect Expenses	Net Operating Income
American	$ 980,732	$ 812,850	$ 27,684	$ 17,861	$ 1,356	$ 73,161	$ 12,713	$	$ 889,485	$ 423,823	$ 465,662	$ 91,247
Braniff	1,738,626	1,078,170	530,083	18,702	. . . .	76,899	28,790	. . . .	1,589,633	727,823	861,810	148,993
C & S	878,422	404,725	380,526	2,259	. . . .	57,047	13,831	. . . .	749,431	291,453	457,978	128,991
Colonial	483,198	248,077	222,106	3,220	. . . .	3,396	1,880	. . . .	356,149	143,813	212,336	127,049
Eastern	207,801	173,384	23,283	. . . .	. . . .	9,715	1,419	. . . .	239,411	129,100	110,311	-31,610
National	362,341	313,936	20,632	. . . .	4,292	15,011	8,110	360	431,997	150,533	281,464	-69,656
Northwest#	3,164,398	1,809,758	303,945	177,407	18,646	674,033	21,335	35,576	3,086,145	1,685,527	1,400,618	78,393
Panagra	4,048,768	2,556,021	888,519*	214,326	217,033	. . . .	102,722	15,004	3,065,451	1,320,560	1,744,890	983,318
PAA												
Latin Amer.	15,579,935	10,219,700	1,765,363**	625,668	2,346,519	. . . .	354,420	130,591	14,529,230	6,374,629	8,154,602	1,050,705
Atlantic	9,660,968	8,076,113	-1,218,693**	807,606	1,210,120	. . . .	157,581	346,077	16,622,590	8,090,296	8,532,293	-6,961,622
Pacific	7,358,781	3,935,578	2,173,580**	318,925	733,522	. . . .	60,760	25,901	7,098,929	3,881,967	3,216,963	259,852
Alaska	1,394,598	641,677	492,480**	. . . .	250,866	. . . .	5,409	. . . .	1,240,856	583,803	657,053	153,742
TWA	10,989,804	6,211,428	2,271,621	891,293	. . . .	798,965	140,339	167,233	10,657,692	5,012,154	5,645,538	332,112
United	1,526,373	1,014,639	170,516	. . . .	. . . .	39,134	7,602	. . . .	2,249,316	1,497,261	752,055	-722,943
TOTALS	58,374,885	37,496,056	8,051,645	3,077,267	4,832,354	1,747,361	916,911	720,742	62,806,315	30,312,742	32,493,573	-4,431,429
Figures for American Overseas Airlines for Quarter Ending September 25, 1950 (Date of PAA-AOA Merger)												
AOA	7,651,678	5,817,619	970,657	303,263	. . . .	347,024	53,986	80,630	6,690,574	3,725,226	2,965,348	961,104

Special debit of $2,595,000 in mail pay compensation refunded for prior periods not reflected in operating statistics.
* U.S. mail pay accrued on basis of show cause order dated April 12, 1949, which accrual exceeds amounts payable under temporary rate order dated April 13, 1950 by $237,519.
** After adjustment (for period January 1 to September 30, 1950) from company's estimate of amount which should be received in accordance with terms of the Civil Aeronautics Act when permanent rates are established, to temporary rates in effect, of:
Latin American Div. $41,367; Atlantic Div. $4,703,060; Pacific Div. $763,191; Alaska Div. -$196,282.

U. S. International Airline Revenues & Expenses, 1950

Airlines	Total Operating Revenues	Passenger Revenues	U. S. Mail Revenues	Foreign Mail Revenues	Express Revenues	Freight Revenues	Excess Baggage Revenues	Non-Scheduled Transport Rev.	Total Operating Expenses	Aircraft Operating Expenses	Ground & Indirect Expenses	Net Operating Income
American	$ 4,031,144	$ 3,406,570	$ 93,480	$ 67,049	$ 4,495	$ 274,300	$ 52,433	$ 3,811	$ 3,702,449	$ 1,858,588	$ 1,843,861	$ 328,694
AOA	18,325,117	13,075,311	2,981,061	898,323	. . . .	965,338	131,748	145,717	18,818,747	10,211,789	8,606,958	-493,630
Braniff	5,663,610	3,318,890	1,937,442	49,885	. . . .	253,702	86,324	. . . .	5,577,129	2,548,556	3,028,573	86,481
C & S	3,738,713	1,916,124	1,514,928	10,313	. . . .	193,837	67,210	. . . .	3,448,721	1,565,064	1,883,657	289,991
Colonial	1,458,675	1,098,515	315,352	10,340	. . . .	12,943	4,389	. . . .	1,343,642	535,192	808,450	115,034
Eastern	1,089,474	799,340	65,789	. . . .	. . . .	56,309	7,232	160,804	1,007,241	514,559	492,681	82,233
National	1,598,450	1,433,138	54,026	. . . .	57,721	27,245	24,824	1,495	1,684,748	612,638	1,072,109	-86,298
Northwest	14,214,647	6,734,160	4,466,500**	531,716	57,052	2,025,240	71,486	137,508	11,518,476	5,809,974	5,708,502	2,696,171
Panagra	15,287,916	9,574,390	3,720,246***	723,655	724,589	. . . .	354,882	58,574	13,342,170	6,183,657	7,158,513	1,945,746
PAA												
Latin Amer.	59,989,248	40,667,417	7,223,793#	2,031,970	7,587,516	. . . .	1,120,367	696,603	57,684,113	25,606,816	32,077,297	2,305,135
Atlantic	46,535,188	28,687,301	10,735,253#	2,255,556	3,419,562	. . . .	531,604	508,287	50,382,394	25,120,216	25,262,178	-3,847,206
Pacific	31,815,596	15,832,098	11,709,687#	1,239,887	2,337,732	. . . .	187,308	177,554	28,833,519	15,763,972	13,069,547	2,982,076
Alaska	5,163,203	2,651,240	1,306,301#	. . . .	962,567	. . . .	16,904	219,206	4,782,615	2,278,371	2,504,243	380,589
TWA	43,811,833	27,385,651	9,069,503##	3,071,707	. . . .	2,544,335	555,984	456,979	38,825,334	19,375,478	19,449,855	4,986,499
United	5,682,601	3,995,923	495,709	. . . .	. . . .	145,908	24,741	. . . .	7,271,195	4,721,714	2,549,481	-1,588,594
TOTALS	258,405,415	160,576,068	55,689,070	10,890,401	15,151,234	6,499,157	3,237,436	2,566,538	248,222,493	122,706,584	125,515,905	10,182,921

* Figures for AOA are through September 25, 1950, effective date of PAA-AOA merger.
** Special debit of $2,595,000 in mail pay compensation refunded for prior periods not reflected in operating statistics.
*** U.S. mail pay accrued on basis of show cause order dated April 12, 1949, which accrual exceeds amounts payable under temporary rate order dated April 13, 1950 by $1,216,246.
# Mail revenues are based on temporary rates. It, as in prior years, there was included therein additional operating revenue from carriage of U.S. mail, which the company estimates should be received, revenues would have been greater than amounts shown by $7,842,810, there would have been provisions for reserve thereagainst of $2,618,047 and for Federal income tax of $2,194,064, with a resulting increase of net income to $7,094,364.
U.S. mail revenue is computed at rates in effect prior to issuance of show cause orders E-3351 dated November 14, 1949 and E-3882 dated February 7, 1950, issued by CAB proposing a reduction in rates of compensation of US mail carried over TWA's international routes.

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AIRLINE PEOPLE

ADMINISTRATIVE

Charles J. Cox succeeds the late **Robert H. Purcell** as controller and asst. treas. of Western.

Col. A. D. Tuttle, president of the Aero Medical Association, retired June 1 as medical director of United. **Dr. George J. Kidera** succeeds him.

Hugo K. Mayr is now North American mgr. for Swissair.

George B. Brown named mgr. wage and salary adm. for American.

Lloyd W. Hartman, formerly general manager and secretary-treasurer of Nationwide Airlines, named treasurer of Lake Central. **William W. Weesner** promoted to secretary.

D. C. Bythell named director of sales and advertising for Trans-Canada.

—OPERATIONS-MAINTENANCE—

C. Pate Hutchens is exec. asst. to **J. B. Franklin,** Capital's v.p.-operations and maintenance.

William H. Reininga becomes office mgr. at United's Chicago headquarters.

George M. Messenger, former v.p. and secy. of Pacific Overseas, is maintenance rep. of The Flying Tigers on military and govt. contracts. **B. R. G. (Fish) Hassell** recalled to active military duty.

Harold L. Williams named station mgr. for Pan American at Montevideo.

C. H. Taylor is superintendent of stations and flight service for Capital.

Frank J. Haas recalled to active duty. **Paul K. Winters** succeeds him as supvr. of navigation for Northwest.

Antonio Silver Riverolli has been named station manager for American Airlines de Mexico at Victoria, replacing **Blas Narro Dunne,** resigned.

W. J. Butcher, Jr., formerly stores supervisor for Trans World Airline at Kansas City, Kan., has replaced **L. D. Dodson,** now on military leave, as supervisor of stores at KC Municipal Airport.

William R. McGovern, station manager for Continental Air Lines at Trinidad, Colo., for the past year, has been transferred in the same capacity to Great Bend, Kansas, newest station on the Continental system.

Robert L. Eppelein is new station manager for Pan American World Airways at Pointe-a-Pitre, Guadeloupe, succeeding **Andrew W. Abela,** transferred to New Orleans.

V. H. Fulcher advanced to director of traffic service for Trans-Canada Air Lines. **A. J. Warwick** becomes director of traffic planning.

Edmund H. Lewis replaces **C. D. Pease** as station manager for UAL at Santa Catalina Island.

Donald R. Decker named staff asst. to the v.p.-passenger service, with United. **Mary Duggan** becomes chief of stewardess service at Chicago.

TRAFFIC & SALES

Herbert J. Lyall, Jr., named system dir. passenger sales for American. **Richard W. Baker** succeeds him as dsm in New York.

William L. Morrisette, Jr., is traffic & sales mgr. for Eastern in the Greater Miami area.

D. S. McLauchlin named adv. mgr. for Trans-Canada.

J. O. "Bill" Urquhart promoted to mgr. of group and convention sales for Capital.

Edmund Stohr is asst. to the v.p.-traffic adm., with United, replacing **James N. Rauen,** who resigned to become mgr. of newly formed Brake Division of U. S. Spring & Bumper Co. at Santa Clara, Calif.

Stohr

John Budd is ato mgr. for Capital at Cleveland.

Stanley P. French is now director of schedules and tariffs for All American.

A. C. Hunt named general sales manager for Slick.

Glenn W. Evers is United's new d.s.m at Des Moines replacing **Allen E. Towne** on military leave. **Earle T. Carkin** replaces Evers as dist. cargo rep. in New York.

J. Lane named mgr., rates and tariffs, with Trans-Canada.

Andrew G. Diddel becomes Eastern's traffic & sales mgr. in New York.

R. B. Bloker named to newly created position of mgr. of radio, TV and motion picture contacts with TWA in Los Angeles.

Don Hunter becomes sales promotion mgr. for TWA's western region, and **John Forsyth** for the Atlantic region.

Diddel

Louis A. (Tony) Bragassa, cargo supervisor at PAA's Miami terminal, transferred to same position in San Juan. **Arthur Sumner** takes the Miami post. **Kenneth F. Conrad** is cargo claims inspector at Miami.

William E. Barron named Continental sales manager at Houston.

Andy Johnston named sales manager for BOAC in Miami area.

Kenneth A. Fraser is new asst. sales mgr. for Western at San Francisco.

Charles E. Ballard promoted from American sales rep. at Long Beach to sales mgr. at Oakland.

Charles Alderman becomes chief of ticket sales for United at Washington.

Jim Crawford succeeds **Jim Gowdy,** resigned, as district publicity manager for United at San Francisco.

George Masters named assistant director of publicity for Northwest.

Airline Commentary

By Eric Bramley

IMMEDIATE and vociferous response came to last issue's column item quoting a reader as stating that he could find only two state capitals without scheduled airline service—Jefferson City, Mo., and Annapolis, Md. We asked if anyone wished to comment, and indeed they did. Read on:

J. Raymond Brummet, president and general manager, BACA Airlines, Jefferson City, Mo.: "We are amazed to find out that you did not know that Jefferson City . . . does have scheduled airline service and has had such service for more than one year. BACA Airlines serves Jefferson City and Columbia, Mo., from Kansas City and St. Louis with five flights per daily schedule using single-engined Cessnas . . . It is not necessary to have a mail subsidy in order to be a scheduled airline. BACA . . . has operated at a slight profit. Also, BACA's passengers have purchased over $12,000 worth of space from our mail-carrying big brothers at the St. Louis and Kansas City terminals."

Milton M. Katz, Ever-Ready Refrigeration Co., Trenton, N. J.: "How about Trenton, state capital of New Jersey?"

C. N. Johnson, managing editor, *Official Airline Guide* (an American Aviation publication): "Actually there are two capitals that receive secondary service: Frankfort, Ky., through Lexington, and Carson City through Minden. Trenton, N. J., does not have any scheduled service."

David G. Iliff, Jr., Bloomington, Ind.: "Trenton is a certificated route point of Eastern Air Lines but has never received service. Also, Frankfort, Ky., does not have what one would call satisfactory air service. Lexington, Ky., is served by Delta, Piedmont and Eastern, but the first two do not claim in their timetables that they serve the Blue Grass capital directly. Eastern lists it in its station directory, but at $12.50 per cab ride from the Lexington airport, the service is a bit expensive. For those who like to play these games, I propose a few of my own. What city which is the largest in its state does not have scheduled air service? Answer: Huntington, W. Va., certificated for Piedmont and Eastern but never served. Want another? Then, what states . . . do not have service by a local service airline? Answer: Maine, Vermont, North Dakota. And for a real main course, try to route a passenger from Boston to Seattle . . . using only local service airlines. This one can't be done completely unless Southwest gets the Reno-Sacramento leg it has asked CAB for, but that is the only gap in the route."

We'll venture it once more—anyone care to comment?

•

Do you know how easy it is to set up an extra section? We quote the following, in somewhat revised form, from Capital Airlines:

1. Station makes a request to space control; space control makes a request to traffic adviser; traffic adviser makes request to coordinator; coordinator checks with maintenance scheduling.

2. Maintenance scheduling says "No"; coordinator tells traffic adviser "No"; traffic adviser tells space control "No"; space control tells station "No."

3. Station reservations manager calls vice president-sales; v.p.-sales talks to president; president talks to vice president-operations; v. p.-operations talks to maintenance scheduling.

4. Maintenance scheduling tells coordinator "Okay"; coordinator tells traffic adviser "Go ahead"; traffic adviser tells space control "Okay"; space control tells station "Okay."

5. Plane breaks down and passengers are carried by competitor.

•

Another squawk about tipping. On page 3 of a Washington newspaper appeared an ad stating that "chauffeurs" were wanted for "dignified positions driving taxi-limousines at the Airport . . . Average salary approximately $12.00 per day. Handling finest people." Then comes the punch line: "Gratuities way above the average." Since when has it become necessary to tip limo drivers? And since when have tips become such an integral part of the job that they're held out as bait in advertisements? This encourages drivers to have their hands out. Limo service is a necessary adjunct to airline service, and there's no tipping connected with the latter. So instead of above-average gratuities, let's have "no tipping" signs in the cars.

$2½ MILLION PROGRAM:

Fewer, Better Maryland Airports Urged

By KEITH SAUNDERS

PROFESSIONAL airport consultants have come up with a state airport program calling for *fewer* airports than now exist in the state.

Such a report has been prepared for the Maryland State Aviation Commission by the combined firms of Leigh Fisher & Associates, of South Bend, Indiana, and Thomas B. Bourne Associates, Inc., of Washington, D. C.

The program, calling for 24 strategically located public airports instead of the 33 haphazardly located fields now in operation in Maryland, has been approved by the Governor and all the state agencies involved, but was completed too late for implementing legislative action to be taken this year.

The Maryland program calls for:

- **Continued use** of 14 existing airports, including eight municipal fields, all of which were found to be properly located and to be serving a specific demand.
- **Deletion** from the state system of existing airports which are poorly located and have fewer than 20 planes based on them.
- **Construction** of 10 new airports at suggested specific locations.

Integrated System

Said the consultants in their report:

"An integrated Maryland airport system of 24 adequate civil airports will serve the need for the indefinite future. There is adequate aviation activity throughout the state to warrant the operation of 24 permanent, safe and adequate airport facilities . . .

"Not only is it more economical to build, maintain and operate fewer but better airports, but, also, the concentration of activity will encourage better service to the public at lower cost."

The Maryland State Aviation Commission took stock of the state's aviation resources and facilities a few months ago and was concerned over what it found. It saw the need for a program that would:

a. Make possible the most prudent expenditure of the limited public funds available for airport construction.

b. Eliminate duplication of expensive landing area facilities.

c. Halt wasteful competition between airports.

d. Provide greater services at less expense.

e. Help airport managers and fixed base operators to operate at a profit.

f. Equalize the tax burden on all users.

Experienced investigators from the Fisher-Bourne organization visited every airport and every commercial aviation service operator in Maryland, investigating in detail the conditions of their business, gross sales, expenses, market trends, and the condition of the general aviation industry in the state.

The field work alone took from last September to January of this year, and was one of the most exhaustive investigations into business phases of airports and aviation service operations ever conducted.

Recommendations

The basic program the consultants came up with on the basis of their studies consisted of these five recommendations:

1. That, like highways, the basic airport system should be publicly owned. Therefore, 16 public landing areas should be developed and/or acquired, in addition to the existing eight municipal airports in Maryland.

2. To guarantee that the 24 airports in the program are open to the public for safe operation 365 days in the year, it was recommended that maintenance of the landing areas be undertaken by state roads commission crews.

3. Continued state financial assistance in the construction and improvement of the 24 landing areas is also recommended.

4. That the state register all civil non-airline aircraft, charging a reasonable registration fee (perhaps 1c per lb. of aircraft gross weight per year) in lieu of personal property taxation.

5. That the motor vehicle fuel tax law be amended to channel the refund of non-airline civil aircraft fuel tax to the state aviation fund, to be used in developing paved, lighted permanent landing areas for public use.

It is estimated the receipts from registration fees and the fuel tax would, over a 20-year period: repay the state's initial investment of about $600,000, pay the administrative expenses of the commission, reimburse the state roads commission for airport maintenance work performed, pay for at least a single bituminous landing strip on all turf fields, as well as a basic service building on most of the airports.

Airport Certification

To eliminate costly duplication of facilities and unsound competition between airports, the Fisher-Bourne

Dual Attack— Firemen demonstrate dual methods of spraying from new fire truck in use at London (England) Airport. Truck sprays from hand-operated nozzles as well as from an overhead boom, the latter spraying at a rate of 2,500 pounds per minute. Truck has capacity of 6,000 pounds of liquid carbon dioxide and 300 Imperial gallons of foam solution.

They've been landing at Quincy, Ill. since 1887

● Quincy, Ill., site of Tom Baldwin's breath-taking parachute jump in 1887, is still a favorite landing place for midwest fliers. Baldwin jumped from a gas-filled balloon, dropped 4,500 feet into a cornfield hanging by his hands from the ring of a muslin 'chute.

But today's fliers landing at Baldwin Field find three 5,400-foot runways on a beautifully equipped airport that combines big-ship capacity with "small-plane hospitality." Speaking as an aviation engineer with 20 years of private flying, Manager Frank Phillips says that one of the best things a modern field can offer is *Standard Skyway Service.* "It's got STANDARD's pioneering record behind it," Phillips says. "I know a lot of fliers who depend on it all over the Midwest."

STANDARD

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Everywhere in the Midwest
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STANDARD OIL COMPANY (INDIANA)

Cost of Maryland Airport Program

Priority Group	State Funds (per formula)	Municipal Funds (per formula)	Federal Funds (eligible)	Total
First year	$170,400	$243,700	$414,100	$828,200
Second year	108,245	115,155	223,400	446,800
Third year	111,565	144,760	256,325	512,650
Fourth year	128,030	112,295	240,325	480,650
Fifth year	62,590	24,285	86,875	173,750
Total program	**$580,830**	**$640,195**	**$1,221,025**	**$2,442,050**

report recommends that the state aviation commission certificate the public necessity of a commercial or service airport prior to its development. Existing airports would not be affected by certification. This, it was stated, would assure the public of the best service at the lowest possible cost, and would aid aviation commercial services in centralizing sufficient trade to warrant private investment in service facilities.

The classifications recommended are: (1) **Commercial**—a public airport open and attended during daylight hours 365 days each year, with full aviation commercial services available; and (2) **Service**—a public airport with a limited trade volume, open to the public during specified and published hours, with only fuel, telephone and personal comfort facilities being required. Sixteen commercial and eight service airports (most of the latter being recreational and seasonal airports) are recommended in the state system.

Site Criteria

Standards established by the consultants by which to judge airport locations are as follows:

1. Each site should be on a numbered and paved state or U. S. highway.

2. The area to be reserved for commercial service buildings should lie between the proposed landing strip and the highway.

3. All new sites should be considered for a single-strip development.

4. Each site should permit a runway length of at least 3,600 feet, with both approaches clear to at least 30 to 1 glide ratio at the expanded length.

5. Centerline of strip at closest point to highway should not be more than 750 feet to edge of highway right of way.

Such a location, it was pointed out, will permit extensive development of non-aviation revenues by merchandising of many services to both automobiles and aircraft.

Five-Year Plan

The consultants recommended that development of the system should be scheduled over a five-year period, but that sites for the new airports needed in the system should be acquired immediately. Total cost of the sites required is approximately $390,000, of which only $80,000 would have to be provided by the state.

A summary of the report has been sent to each licensed airport in Maryland for the study of airport managers, fixed-base operators, pilots and other interested persons.

CAA AIRPORT GRANTS

Federal-aid grant offers totaling $4,555,073 were made by the Civil Aeronautics Administration during May to 37 communities, as follows, with airport classes in parentheses:

Alaska: Wrangell Seaplane Base, $7,500.

Arizona: Sky Harbor Airport, Phoenix (5), $509,252; Ernest A. Love Municipal, Prescott (5), $12,621; Tucson Mun. No. 2 (5), $29,157 (two grants); Yuma County Airport (6), $3,096.

Arkansas: Stuttgart Mun. (4) $6,662.

California: Peninsula Airport, Monterey (4), $11,261; Oakland Mun. (5), $189,709 (two grants).

Colorado: Stapleton Airfield, Denver (6), $21,800.

Idaho: Pullman-Moscow Airport (3), $4,195.

Illinois: Bloomington Mun. (3), $69,500; Quad City Airport, Moline (4), $317,000; Du Page Co. Airport, West Chicago (2), $105,000.

Indiana: Connersville Mun. (3), $11,000.

Iowa: Muscatine Mun. (3), $7,000.

Kentucky: Middlesboro Airport (2), $68,000.

Louisiana: Moisant International New Orleans (6), $99,882.

Maryland: Friendship International, Baltimore (8), $150,000.

Michigan: Lakeview Mun. (1), $9,400.

Minnesota: Owatonna Mun. (2), $6,500.

Missouri: Sedalia Mun. (3), $55,000; Lambert-St. Louis Mun. (8), $13,000.

Nebraska: Columbus Mun. (2), $38,163; Minden Mun. (1), $9,250.

New Hampshire: Berlin Mun. (4), $18,112.

New Jersey: Newark Mun. (7), $1,500,000.

New York: La Guardia Airport (5), $335,000.

North Carolina: Simmons-Knott Airport, New Bern (4), $35,845.

North Dakota: Grand Forks Mun. (4), $20,000.

Ohio: Middletown Mun. (3), $10,050.

Pennsylvania: Somerset Mun. (2), $10,000.

Puerto Rico: San Juan International (6), $1,200.

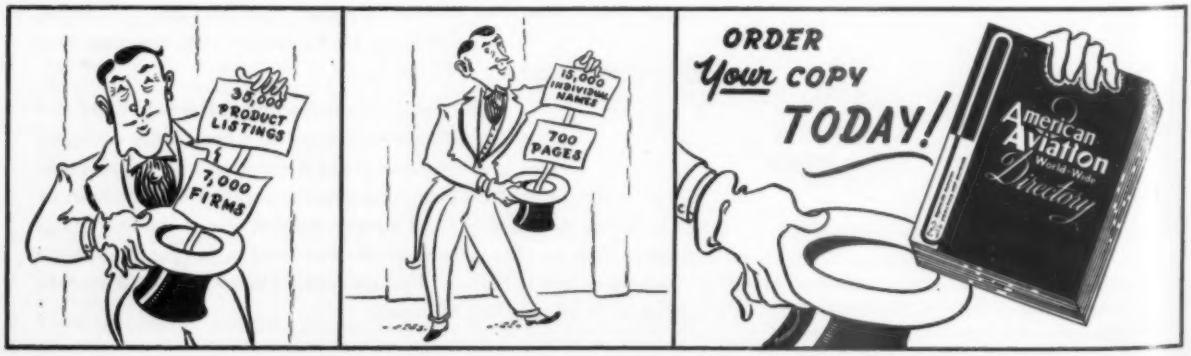
South Dakota: Huron Mun. (3), $2,289.

Tennessee: Berry Field, Nashville (6), $113,096.

Texas: Midland Air Terminal (5), $16,133; San Antonio Mun. (4), $543,000.

Wisconsin: Curtiss-Wright Airport, Milwaukee (2), $277,400; Rusk Co. Airport (2), $19,000.

These increased to 1,756 the number of grant offers made under the Federal Airport Program, and boosted to $144,894,167 the amount of Federal funds involved.



Order Your Copies Today———Use Coupon on Page 37

AIRPORT NEWS DIGEST

Gate Study: An important study of the problem of gate positions has been instituted by the Planning Division of CAA's Office of Airports, following pilot studies made by CAA observers at Washington, Miami, Indianapolis and Chicago.

Airport managers, airline personnel and tower operators at 110 key airports have been asked to cooperate in the study, which has the backing of the Air Transport Association.

Purpose of the study is to determine (1) how many gate positions are required at airports with various types and volumes of traffic, and (2) means of achieving the fullest utilization of a given number of gate positions at airports where expansion is not practicable. Indications from the pilot studies are that "fringe" gate positions might be utilized much more than they are if the airlines could overcome their reluctance to using them.

Cactus Does It: *Clyde Sherrar, manager of the Midland (Tex.) Air Terminal, was having a problem with the big "picture" window in his terminal building overlooking the ramp. Youngsters would get*

their noses and fingerprints against it, and keeping the smudges wiped off was a never ending bother. Sherrar's solution to the problem was to put flower boxes planted with small cacti along the inside of the window. This keeps the kids away while leaving vision virtually unrestricted.

ADMINISTRATION BUILDINGS

• **New $162,721 airport administration** building at Lewiston, Idaho, is scheduled for completion about July 5.

• **Contract for construction** of new administration building and taxiways at Douglas Field, Charlotte, N. C., will be let before June 30.

• **Construction will start** in early June on new $350,000 administration building at Sioux City (Ia.) Municipal.

• **A special Massachusetts legislative committee on aviation** has reported that additions to the $5,000,000 apron building at Boston's Logan International Airport may make it unnecessary to build a proposed new $9,500,000 terminal.

AIRPORT LIGHTING

• **Contract of $110,988 for installing** high intensity runway lights and taxiway lighting at Avoca Airport, Scranton, Pa., has been let.

• **Plans have been approved for installation** of high intensity lighting system at Des Moines Municipal.

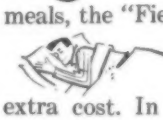
LIGHTING

• **A high-intensity lighting system** for the northeast-southwest runway at Dayton (O.) Municipal has been approved by the city, subject to Federal-aid money being provided.

—KEITH SAUNDERS

22 YEARS BEHIND THE

(reading time 1 minute!)

● In 1928, airplane travel was a novelty in the U.S.A. But down in land, Panagra offered scheduled flights from Lima to Talara, Peru. In South America, travel by was slow. Crossing the Andes by was uncertain. Panagra planes got popular quickly, linked more countries. Farmers still call every that they see a "Panagra." With 9,000 miles of air routes, today's PAA GRACE deluxe flight is *El InterAmericano*, only daily DC-6 between the Americas, fastest to Panama*, Guayaquil, Lima, Santiago, Buenos Aires. *El InterAmericano* offers complimentary with Gourmet Galley meals, the "Fiesta Lounge," and  service at small extra cost. In the U.S.A., Pan American World Airways is the sales agent for

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- Average copy read by 4.3 people . . . total audience *55,000+*
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- Maximum unduplication — *47.5% read no other aviation magazine.*

77% do *not* read Aviation Week
92% do *not* read Aero Digest
94% do *not* read Aviation Age

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Air Associates, Inc.
Air France
Aircraft Division, Fairchild Engine and Airplane Corp.
Aircraft Engine and Parts Corp.
Aircraft Radio Corp.
AiResearch Manufacturing Co., Division of the Garrett Corp.
Airwork Corp.
All-American Airways, Inc.
Allison Division, General Motors Corp.
Allison Radar Corp.
Frank Ambrose Aviation Co., Inc.
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American Chemical Paint Co.
American Electric Heater Co.
American Phenolic Corp.
Ansul Chemical Co.
Arrowhead Rubber Co.
Avica Corp.
Avis Rent-A-Car System
The B. G. Corp.
The Babb Co., Inc.
Martin-Baker Aircraft Co., Ltd.
Beech Aircraft Corp.
Bell Aircraft Corp.
Boeing Airplane Co.
Braniff Airways, Inc.
Breeze Corps., Inc.
Gordon D. Brown & Associates
Buchanan and Co., Inc.
Burnham & Co.
C & H Supply Co., Metal-Cal Division
Canadair, Ltd.
Capital Airlines, Inc.
Central Airlines, Inc.
Champion Spark Plug Co.
Chance Vought Aircraft Division, United Aircraft Corp.
Chicago and Southern Air Lines, Inc.
Cities Service Oil Co.
Collins Radio Co.
Colonial Air Lines, Inc..
Conmar Products
Connecticut General Life Insurance Co.
Consolidated Industries, Inc.
Consolidated Vultee Aircraft Corp.
Continental Air Lines, Inc.
Continental Motors Corp.
Curtiss-Wright Corp.
Delta Air Lines, Inc.
The Albert Dickinson Co.
Dinkler Hotels
Douglas Aircraft Co., Inc.
Eastern Air Lines, Inc.
Eclipse-Pioneer Division, Bendix Aviation Corp.
The Electric Auto-Lite Co.
Emerson Electric Manufacturing Co.
Engine Division, Fairchild Engine and Airplane Corp.
Esso Export Corp.
Esso Standard Oil Co.
Flightex Fabrics, Inc.
Frontier Airlines, Inc.
Gables Engineering, Inc.
General Electric Co.
General Laboratory Associates, Inc.
General Ticket Co.
The Glidden Co.
Goodall Fabrics, Inc.
B. F. Goodrich Co.
The Goodyear Tire & Rubber Co., Inc.
Greer Hydraulics, Inc.
Grumman Aircraft Engineering Corp.
Guided Missiles Division, Fairchild Engine and Airplane Corp.
Gulf Oil Corp.
Halpin Co-airdinator Co.
Hamilton Standard Division, United Aircraft Corp.
Hawaiian Airlines, Ltd.
Hertz Driv-Ur-Self System, Inc.
Hotel Lexington
Hydro-Aire, Inc.
Jack & Heintz Precision Industries, Inc.
Kollsman Instrument Corp.
Lake Central Airlines
Lear, Inc.
Marquette Metal Products Co.
The Glenn L. Martin Co.
Mid-Continent Airlines, Inc.
Minneapolis-Honeywell Regulator Co.
Monsanto Chemical Co.
National Airlines, Inc.
Northrop Aircraft, Inc.
Northwest Airlines
The Ohio Chemical & Surgical Equipment Co.
John Oster Manufacturing Co.
Pacific Airmotive Corp.
Pan American-Grace Airways, Inc.
Pan American World Airways, Inc.
Paper Manufacturers Company
Pesco Products Division, Borg-Warner Corp.
Philippine Air Lines, Inc.
Phillips Petroleum Co.
Piedmont Airlines
Pioneer Air Lines, Inc.
Pratt & Whitney Aircraft Division, United Aircraft Corp.
Products Division, Bendix Aviation Corp.
Radio Communications Division, Bendix Aviation Corp.
Republic Aviation Corp.
Riddle Aviation Co.
Robinson Airlines Corp.
Robinson Aviation, Inc.
A. V. Roe Canada, Ltd.
Ryan Aeronautical Co.
Scandinavian Airlines System, Inc.
Scintilla Magneto Division, Bendix Aviation Corp.
Sikorsky Aircraft Division, United Aircraft Corp.
Simmonds Aerocessories, Inc.
Sinclair Refining Co.
Southern Airways, Inc.
Southwest Airways Co.
Spartan Aero Repair
Sperry Gyroscope Co., Division of Sperry Corp.
Standard Oil Co. of Indiana
Stratos Corporation
Surface Combustion Corp.
The Texas Company
Thompson Aircraft Tire Corp.
Transport Equipment Co.
Trans-Texas Airways
Trans World Airlines
A. E. Ulmann & Associates, Ltd.
United Air Lines, Inc.
Van Dusen Aircraft Supplies, Inc.
Walter Motor Truck Co.
Western Air Lines, Inc.
Wilcox Electric Co.
Wisconsin Central Airlines, Inc.
Wright Aeronautical Corp.

LOCAL OPERATIONS

State Crop-Dusting Laws Increasing

. . . Minimum Regulation Urged

By VERA FOSTER

HALF of the 24 states having laws on agricultural flying have passed them in the past two years. This comparatively recent upsurge in legislation reflects the steady increase in agricultural flying.

States which have recently enacted laws, or are considering rulings now, are, Ohio, Alabama, California, Idaho, Indiana, Kansas, Massachusetts, South Dakota, Vermont, Utah, Washington, and Wyoming.

A survey of state aviation directors by AMERICAN AVIATION reveals the following conclusions:

- While regulations are necessary, the fewer the better.
- Aerial applicators, in the light of over 20 years' experience, can no longer be regarded as "fly-by-night" operators. They cannot afford to be.
- Self-discipline is needed by operators to get recurring business. Though seasonal moves are necessary for many applicators, records show that they follow a definite pattern, returning year after year to the same air strips and the same customers.
- Many state legislatures feel that hampering regulation may tend to discourage applicators from offering needed service to farmers of the state. Today most lawmakers feel that the demand exceeds the supply of applicators.
- If common law in the state does not place responsibility for property damage and breach of contract precisely, officials feel that additional rules are necessary to protect landowners from a few irresponsible operators. State aviation officials, however, realize that poor applicators are scarce and do not last.
- Operators themselves believe that common-sense regulation, such as pilot experience requirements, are all but unnecessary. Owners state that it would be business suicide to send green pilots out in hard-to-replace agricultural planes to treat acreage of valued customers.
- Adequate maintenance is a fetish with applicators. Whether or not regulations specify certain maintenance procedures owners state that they have too much to lose to permit carelessness.

All in all, the consensus among state aviation officials and lawmakers seems to be that the responsible and capable way in which the aerial applicator has thus far done his work makes complicated rulings unnecessary.

Education, Not Regulation

In line with this school of thought Missouri, which is in many areas entirely dependent on aerial application for insect control, fosters "education rather than regulation." This state has added no laws to the Federal rulings, despite the number of operators within its borders.

Common law, whereby suits may be instigated, and liens placed against equipment to settle disputes, prevails in most states. Property damage and personal injury is the responsibility of the aircraft operator in most states and territories.

California and Indiana relieve the owner of responsibility in case of injury or death of non-paying passengers unless the pilot is found guilty of reckless flying.

These policies of non-interference, followed in the majority of states, would seem to have paid off. The rapid growth of the industry has almost certainly been encouraged by the absence of burdensome regulation.

In 1946, for example, CAA reported only 320 operators using about 1,200 planes in the country. Today there are 1,750 operators registered and approximately 6,000 agricultural planes in use.

2, 4-D Watched

Legislative attention, however, has focused on a few important aspects of crop dusting and spraying. Federal regulation, for example, prohibits the aerial application of 2, 4-D in dust form. Several states, Texas, California, Louisiana, and South Dakota, have added special regulations to govern the spraying of 2, 4-D and similar herbicides. Pennsylvania prohibits entirely any application of 2, 4-D.

Usually the state 2, 4-D regulations specify positive shut-off valves at each spray nozzle operated by a lever in the cockpit. Inspection by state employes is generally provided in order to insure a leak-proof rig. Reports on each job are required to serve as evidence in event of legal action. Information is usually required on the location of the 2, 4-D work, the solution used and wind velocity. Anemometers, to measure probable drift of the chemical, are required equipment in some states.

In Mississippi two suits have come

(*Please Turn to Page* 58)

Atomic Patrol—Piper Super Cubs such as this one are being used to patrol the miles of barbed wire surrounding the atomic energy plant at Hanford, Washington, to apprehend motorists straying too close to the reservation and to signal aircraft flying into the restricted area. The "Follow Me" sign signals planes and cars to follow the patrol planes to headquarters for questioning. Whittaker dual landing gear permits the Super Cubs to land in rough country to question suspicious individuals.

THE Washington View

By Vera Foster

CHIEF topic of conversation these days is the personnel shortage. American Airlines has established a flight training school at Meacham Field, Ft. Worth, to supplement its school at La Guardia. The school will train pilots who do not yet have instrument ratings. Fixed base operators are deploring the lack of qualified pilots and mechanics. Midwest corporations complain that experienced pilots to fly executive aircraft are difficult to find.

Columns in trade classified papers are lengthening with "Help Wanted" ads. One operator is advertising for 50 Stearman pilots for spraying and dusting. "May through October" the ad runs, "High pay with plenty of work under contract. Will accept without previous experience."

•

Fifth USAF contract award goes to Texas Aviation Industries of San Antonio. The company has been selected to operate a basic pilot training school at Hondo, Texas. The first class will begin preflight training July 9 as scheduled. Another contract award is to be announced very shortly.

•

National Aviation Trades Assn. is taking the position that bidders for civilian-operated USAF flight training schools should demand an increase in pay for personnel. This increase, NATA asserts, will enable operators of such schools to obtain and retain qualified technicians and instructors.

•

New opportunities for aerial applicators are seen in studies conducted by Dr. William Stewart of the Citrus Experiment Station, Riverside, Calif. Dr. Stewart is said to have increased the size of oranges "to some extent" by spraying the fruit with low concentrations of 2, 4-D, now in use as a weed killer.

•

Washington National Airport reports a rush of executive and personal-type aircraft this year. In April, 2,814 takeoffs and landings were logged. The daily total passed 175 three times in May. The control tower estimates that itinerant arrivals and departures have been over 110 a day for the past two months. Last year's daily average for April and May was around 50 a day.

Air traffic controllers report radio communication much improved and a better quality of equipment being used in smaller planes. Types of plane include Lodestars, twin Beechcrafts, "a surprising number" of Cessna 140 and 190 types, Bonanzas and Navions. Executive flying is booming.

•

Aeronautical Training Society members heard Oliver E. Meadow, staff director on a House committee investigating the G.I. Bill educational program. Meadow asked the operators and the industry to step forward with plans for training programs so badly needed today. Either that "or programs now before Congress will go by default" he warned.

"The government went into the G.I. program," Meadow said, "like an innocent buying a horse. As might be expected, it didn't get its money's worth." This time he indicated advice would be sought and heeded from experts in the field.

•

Could be that CAA's plastic pocket-size cards and wall posters giving precautions and antidotes for parathion poisoning have decreased the number of cases of poisoning among crop dusters this season. No complaints so far this year from parathion handlers . . . **Wiggins Airways** offers service custom-tailored to the flying businessman and his executive plane at the Logan International Airport in East Boston now. Complete with deluxe lounge . . . **Air Force** has bought three Beechcraft YT-34's (Mentors) for test purposes . . . **Two airlines,** Trans-World and United, have inquired wistfully at the Dallas Aviation School, Love Field, in search of A & E mechanics, sheet metal and instrument men and other trained mechanics. **Aerial merchandising** paid off for R. Granert & Sons, clothing manufacturers when 1,357 persons flew in to their factory airport for free breakfast. Sales more than paid the firm for cost of brunch.

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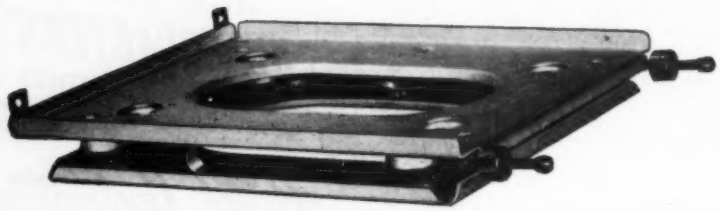

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Vibration Control Engineers

LOCAL OPERATIONS

(*Continued from Page 56*)

up where 2, 4-D was sprayed on rice and drifted over cotton with disastrous results. Common law found the operators negligent; in each case the applicator paid damages to the cotton planter.

Pilots

Pilots in Minnesota, South Dakota, Washington and Wyoming are required to have certain minimum experience qualifications. This experience generally includes from 500 to 1,000 hours' solo time, from 25 to 200 hours' experience in the plane to be used, 5 to 25 hours of dusting experience or dual instruction and occasionally certain specified recent experience is included.

Commercial pilot certificates are required by Federal law when dusting or spraying for hire. State law reaffirms this rule in some instances.

California and Idaho give examinations for adequate knowledge of insecticides and herbicides before permits are issued.

Shoulder harness use while dusting or spraying is mandatory in several states.

Operators and pilots must secure a permit or license in Alabama, California, Idaho, Maine, Oklahoma, South Dakota, Texas (for 2, 4-D only), Utah, Washington, and Wyoming.

Almost half of the 48 states require pilot and aircraft registration. Fees vary from zero, in Wyoming, to $25 in Maine and Oklahoma.

Financial Responsibility

Common law, which places severe financial responsibility on the aerial applicator, is supplemented in some states by the requirement of bond or cash deposits, or proof of liability insurance.

Such deposits, ranging from $1,000 to $25,000, are required by California, Illinois, Kansas, Oklahoma, Texas and Washington. This provides a "cash cushion" in the event of legal action for breach of contract or property damage.

Even though not made mandatory by law, liability insurance is held to be a good investment. Today's effective chemicals, in misjudged wind and crop conditions, can wreak havoc.

Waivers

Usually the CAA waiver suffices to waive state laws on minimum altitudes. States in which additional low-flying waivers must be obtained are Connecticut, Maryland, Michigan, New Hampshire, Indiana, Massachusetts and Mississippi.

To obtain complete and accurate information on the varying state laws operators can write to their state aeronautics commissions or the state departments of agriculture.

Cross-Country

WITH LOCAL OPERATORS

By Page Shamburger

LOUISIANA—**W. Currey Sanders**, on **Shreveport's Municipal**, became a new Beech distributor on April 1. His territory is eastern Texas, northern Louisiana, and southern Arkansas. Currey has been a booster of aviation since 1917. Well known in aviation, Currey and his wife should do a good job of selling Beechs.

Claude L. Hamel is the manager of Shreveport, and he's got the most active field seen in months. All the hangars on the field are full, and the tied-out line is longer than any three airports in this area. Asked what made the increase, Hamel could only say it's an airminded town. Those people use the planes day in and day out, too. It's business use, and not just pleasure flying. They've got DC-3's and Lodestars privately owned, even. He says the airport's making money every year, too, and they have not increased the hangar rates. That's the policy of Shreveport . . . keep the rates low, don't charge tie-down fees or landing fees. Service is top-notch. Claude says there're about 120 planes based here permanently and the transient trade is brisk.

Jack Riley on **Shreveport Municipal** and Longview (Texas) port is putting the de Havilland Dove across all over the country. He's the distributor and is selling planes right and left. The number of sales already made is amazing, but after seeing the performance, it's understanable. The Dove is powered by two Gipsy Queen 70-4 supercharged engines, and they pull it along at a good clip . . . 60% power at 8,000 ft. makes it go to 179 mph.

Everything on the airplane is made by de Havilland and the largest parts shipment ever shipped is on its way to keep the Dove's flying. The plane has a bubble canopy giving so much visibility you can even see backwards. At present, there are aproximately 340 Doves in use with some being utilized to 2,700 hours a year, and Riley is doing top-notch work to see that all he sells will have the best in servicing. He's ideally located in the center of the oil producing country, and his branch and shop in Longview will be completed in all ways. He began flying by using one in his reproduction business and knows the necessity of giving or getting the service for all business planes. Doves are priced around $76,000, and for that amount, owners will deserve good service.

Shreveport is constructing another field on the opposite side of town. This new airport will be used primarily by the airlines with the present one retained for private flying. They're planning to have the best field for private flying in this section, and if it continues as planned, it certainly will be. They've even got an "Oil Row" with four major oil companies with their own hangars, planes and pilots. Shreveport's a good example of what can be done with business flying, and we need lots more just like it.

Sam Ketchum and **Eldon Maxwell** run **Southern Aviation** on the field, majoring in service and overhaul. They've been there only one year but have got more business than they can handle. Eldon says they just can't get good A & E's, and if they had twice the present number of four, they would still be rushed. They've got a complete engine, prop, and accessory shop with a large stock of parts.

Dick Dickerson is the genial manager and operator of **Riverside Airport**, also in Shreveport. Dick specializes in airplane rentals and instruction with the majority of students on a cash basis. He runs an "Aerial Ferry" to Barksdale, right across the river. If the soldiers go into town and come back out it takes about an hour, so Dick built a strip right by the west gate and flies them over in a few minutes. He'll take them back, too. He and his wife do all the work around the airport and say the business is not real good, but it's not bad, either.

Jack Riley, Shreveport, La., and Longview, Texas, is distributor for British de Havilland Dove. The twin-engined transport cruises at 179 mph.

Eunice Stuckey and her son, Savery, Jr., Ruston Municipal Airport, Ruston, La.

One of the best managed airports yet visited is **Ruston Municipal. S. L. Stuckey**, the manager, and his wife, **Eunice**, spread good feeling and friendliness. Eunis has been all through the business of being an airport widow, so, goes out of her way to see the wives of all the students and pilots are treated with much courtesy. The Stuckey's are members of the National Air Taxi Conference and can really give it a boost. Eunis welcomes kids and gives all school tours the absolute run of the airport. CAP is welcomed, too, and Ruston can boast 85 CAP members.

The CAP is in the family too, for Savery, Jr., won an exchange trip to Switzerland last year . . . proves he's an all-out good member. The Stuckey's do most anything to promote aviation and have collected clippings of flying vocations for years. In this way, they're able to prove the value of the airplane to different businessmen. They have a good example on their own field, the **T. L. James Co.**

James was Savery Sr.'s first student and now almost everybody in the company flies. T. L. James Co. has a hangar and several planes flying all the time. They have cooperated with the city in the financing of the airport, and no Federal funds have been necessary. Ruston's a little town, too, but well worth a transient's visit. The Stuckey's have a courtesy car and you're only a couple of blocks from town.

D. Curtis Seamon is the manager of **Selman Field**, Monroe's Municipal, and though he's new to the airport managing job, he's doing a top-notch job. They have limousine and rush hour bus service to the front door. The field's not far out, either. Seamon has planned the landscaping of the airport's area near the terminal building to attract visitors and be a showplace for tourists. The front of the building is planted in gardenias, azaleas, sugar cane, and other plants native to this region.

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LETTERS

(Continued from Page 8)

know that few nonsked operators advertise for fear the CAB will charge them with "holding out" route-type operations in violation of frequency and regularity limitations; that independent agencies, over which both the carriers and the CAB have no direct authority, make such "claims" to the public as these you point out.

It seems to me that distorting the facts of this situation in order to cast discredit on the nonsked industry by innuendo is certainly not becoming to a publication of the high position AMERICAN AVIATION enjoys.

This matter always arouses the utmost anger together with a feeling of futility on the part of this Association because ACTA has spent tens of thousands of dollars in a campaign to clean up an irresponsible independent ticket-agency situation for which it has little responsibility but for which it is continually maligned.

Since this campaign was launched two of the largest national ticket agencies which were also two of the most flagrant violators of ethical business practices among the agencies generating traffic for nonsked carriers have gone out of business. Great progress toward an observed code of ethics has been made throughout the independent ticket agency field. More progress will be made in the future.

ACTA has appealed to the CAB for authority for carriers to advertise openly and generate their own traffic on route operations so that the independent agency situation, the source of the charges concerning gross misrepresentation which you cite, can be eliminated. The Board, so far, has refused our pleas.

Your right to criticize the nonsked industry is not being questioned. But in the future, for the sake of fairness to all concerned, why not give credit where credit is due, and criticize only on the basis of facts and concrete evidence that justify criticism?

ERIC SMITH
Director of Public Relations
Aircoach Transport Association, Inc.

(Editor's Note: All credit to Aircoach Transport Association—which uses same initials as Air Transport Association—for trying to clean up its house but fact remains that some non-skeds issued timetables on their own. If non-skeds have no control over ticket agencies, as Mr. Smith says, that would seem to point up one of our basic arguments—that responsibility must be assumed somewhere for common carrier operations.)

Advertisers In This Issue

ADVERTISER	PAGE
Aircraft Engine and Parts Corp.	38
Aircraft Radio Corp.	34
AiResearch Manufacturing Co., Division of the Garrett Corp.	19
Airwork Corp.	48
Allison Radar Corp.	34
American Airlines, Inc.	40
The B. G. Corporation	2nd Cover
Bendix Aviation Corp., Eclipse-Pioneer Division	45
Products Division	29
Breeze Corps., Inc.	3
Braniff Airways, Inc.	5
Burnham & Co.	33
Canadair, Ltd.	22
Cities Service Oil Co.	42
Consolidated Industries, Inc.	33
Dinkler Hotels	57
The Electric Auto-Lite Co.	7
Flightex Fabrics, Inc.	61
General Ticket Co.	61
The Glidden Co.	8
B. F. Goodrich Co.	10
Gulf Oil Corp.	21
Hertz Driv-Ur-Self System, Inc.	3rd Cover
Hotel Lexington	57
Marquette Metal Products Co.	35
The Glenn L. Martin Co.	25
Minneapolis-Honeywell Regulator Co.	26
Monsanto Chemical Co.	9
National Airlines, Inc.	44
Pan American-Grace Airways, Inc.	53
Robinson Aviation, Inc.	58
Sperry Gyroscope Co., Division of Sperry Corp.	66
Standard Oil Co. of Indiana	51
Surface Combustion Corp.	30
The Texas Company	Back Cover
Trans World Airlines	44
Wilcox Electric Co.	36

WINGS OF YESTERDAY

25 Years Ago

Under the auspices of the Navy Department the 400-hp air-cooled Pratt and Whitney Wasp engine successfully passed its first flight tests at Anacostia, Washington, D. C.

•

President Coolidge signed the Civilian Aviation Bill, which established a Bureau of Commercial Aviation in the Department of Commerce and provided regulations for civilian flying. Congress was expected to appropriate $550,000 to carry on the work of the bureau.

•

10 Years Ago

(In AMERICAN AVIATION)

Army Air Corps was organizing a ferry command to fly U. S.-manufactured planes from factories to Atlantic coast departure points. New command, under Col. Robert Olds, would speed bomber deliveries to Britain.

•

AA, PCA and EAL transferred operations from Washington-Hoover Airport to the new Washington National Airport on June 16, 1941. UAL opened an offline reservations office in the terminal building.

•

War Department bill for fiscal 1942 allocated one-half of a total of $10 billion to the Air Corps. Recommendations were again heard in Congress for a separate air force.

BOOKS

GEOGRAPHY OF THE PACIFIC, Otis W. Freeman, editor. 572 pp. Illustrated, John Wiley & Sons, 440 4th Avenue, New York, N. Y. Price $10.

An excellent new text on the Pacific Ocean and its geography, peoples, climate, explorations and island areas. Thirteen Pacific area specialists contribute chapters. A valuable source book for an area covering one-third of the globe.

W. W. P.

OBITUARY

Al H. Near

Albert H. Near, 54, director of airports with the Louisville and Jefferson County Air Board and a national aviation figure, died May 27 of a cerebral hemorrhage.

He was a director of the National Aeronautic Association at the time of his death, and had at various times served as vice president of the National Association of State Aviation Officials, as a director and president of the American Association of Airport Executives, as a member of the President's Air Coordinating Committee, and as chairman of the original Kentucky Aeronautics Commission.

IN FLIGHT

A PAGE FOR ALL PILOTS

Emergency Board Sees Co-Pilot as Airline 'Forgotten Man'

While the Presidential Emergency Board recommendations in the American Airlines dispute with its pilots appeared to be generally unacceptable to a major segment of the scheduled flying profession, one recommendation of the Board relating to pay increases for the co-pilot has been accepted with general favor and as being long overdue.

Emergency Board recommendations, even though they may be rejected on a specific issue or issues nevertheless do carry weight when contracts are ultimately consummated. On that basis, it is reasonable to expect that co-pilots, termed the "Forgotten Men" of the airline industry by the Emergency Board, will get favored treatment when new contracts are negotiated. Specifically the Emergency Board recommended pay increases for them totaling an average of $1,800 a year. Also some of the fringe benefits, dealing with vacations, sick leave and expenses away from home, also will be regarded with favor.

Under the terms of the Board's recommendations, the base pay scale of monthly rates for American's co-pilots would be $350 a month for the first year and $400 the second as compared to the present rates of $290 and $360. Starting with the third year, the co-pilot would receive all the components or elements of flight pay paid the first pilot, computed in the same manner, except that the co-pilot's flight pay shall be 55% that of the captain.

On this basis, a co-pilot flying 80 hours on a Convair, half days, half nights, will earn $583 per month in his third year, rising $20 per month each year until he reaches $683 per month in his eighth year. On a DC-6 he will earn approximately $85 per month more. The recommended effective date is retroactive to June 1, 1950.

No Longer An Apprentice

The 125-page report of the Board deals at length with the new importance of the co-pilot as a partner in operating today's aircraft. The evolution of the co-pilot from the status of apprentice or helper to a partner or practically a co-captain was described in compelling detail by the Air Line Pilots Association at the hearing, the Board report stated.

First pilots who fly as a reserve captain in a given month would be treated that month as a reserve first pilot or captain; that reserve captains would be given a monthly guarantee of $725 and that the compensation of reserve captains should include base pay plus their flight pay computed on the first pilot or co-pilot basis depending upon the capacity in which they serve on each flight was another Board recommendation designed to improve the status of pilots who do not fly regularly.

While the pilots lost their battle for mileage limitation which would have reduced flying time from 85 hours now in effect to approximately 73 hours, they did win favorable recognition of their demands for specific provisions with reference to on-duty and off-duty time. The Board recommended that on-duty time be limited to 14 consecutive hours "on duty in any 24 hours, except in emergency when it may be 16 hours and that all pilots be given a minimum of four separate periods each month of not less than 48 consecutive hours free of all duty at their home base."

A pilot's vacation pay would be based on the average of his monthly earnings during the six preceding months in which he was on pay status. Sick leave would be accumulated at the rate of 1 1/6 days per month of service up to a maximum of 84 days; that sick leave pay and credit against flying hours would be computed in the same manner as recommended for vacation pay.

Furlough Pay

After two years of employment, all pilots would be entitled to receive furlough pay up to a maximum of three months of base pay, but that no allowance shall be given for furloughs of less than half a month. Furloughs would not include those occasioned by resignation, retirement or the voluntary act of the individual employe, dismissal for cause, revocation of the company's operating certificates, or cessation of work caused by a strike or picketing.

Pilots on a regular bid status who become engaged in training duties would receive base pay plus flight pay either on the basis of the trips lost or else at the rate of their minimum guarantee, whichever is higher. A pilot who failed to meet the company's or the government's standards of proficiency and would therefore require additional training would receive only his base pay. No additional compensation would be given for routine training which does not require the removal of a pilot from his normal, income-producing flying.

The Board recommended that no management clause be written into the contract but that there should be a no-strike, no-lockout provision and that the term of the agreement should run for one year from the time it is executed and goes into effect.

For purposes of the pay formula based on speeds of aircraft, the Convair 240 was fixed at 215 mph; DC-4 at 205 mph; DC-6 at 250 mph and the DC-6B speed at 275 mph, the latter subject to revision under the provision of Section 6 (b) of the prior agreement. The time computed would be actual block-to-block time or schedule time, whichever is greater. Gross weight component would be separately computed on a straight line basis at the rate of 1 3/4c per 1,000 pounds of certificated gross weight per hour.

Provision for Faster Planes

The Board recommended that before aircraft of speeds more than 325 mph are put into operation, the company and the pilots would jointly initiate studies to determine "what bearing such planes are likely to have on the job content of the pilots and on unemployment possibilities with the view either of reaching an understanding thereon or at least of developing facts upon which a subsequent Emergency Board or other tribunal may reach an informed judgment."

In rejecting the pilots' demands for a greater share of the increased productivity of the larger and faster planes which they now fly, through a mileage limitation, the Board held that to a degree this is being accomplished under Decision 83 which was incorporated in the Civil Aeronautics Act, and through a provision in the 1947 contract when the company and ALPA wrote into the hourly pay provisions a gross weight allowance.

"Under Decision 83 a DC-3 captain earned $9.29 per hour. Under the contract which expired on July 1, 1949 a captain flying a Convair 240 earned $12 per hour, and a DC-6 captain earned $13.93 per hour," the Board said. It said the pay of the Convair captain exceeds that of the DC-3 captain by 37%, that of the DC-6 captain over the DC-3 captain by 68%.

BOEDY'S ALBUM

Betty Cleveland
(Mrs. E. W. "Pop")
Cleveland, Ohio
September 5, 1939

Edna Pedler
(Mrs. Jimmy)
National Air Races
September 5, 1939

Paul A. Weld
Piper Aircraft
National Air Races
Cleveland, Ohio, 9/5/39

H. "Heinie" Bender (QB)
Bender Construction Co.
National Air Races
Cleveland, Ohio, 9/5/39

Abbie and George Haddaway
Southern Flight Magazine
National Air Races
Cleveland, Ohio, 9/5/39

Zack Mosley
"Smiling Jack"
National Air Races
Cleveland, Ohio, 9/5/39

Mary Mosley
(Mrs. Zack)
National Air Races
Cleveland, Ohio, 9/5/39

Pat O'Malley
Chuck Kerwood
Mary Mosley
September 5, 1939

Don B. Wilson
United Air Lines
Cleveland, Ohio
September 6, 1939

H. A. "Hank" Frese
Eastern Air Lines
Washington, D. C.
September 6, 1939

B. W. "Bill" Westcott
Holley Carburetor Co.
Paterson, N. J.
September 7, 1939

Arleigh J. Hess
Holley Carburetor
Paterson, N. J.
September 7, 1939

Edward Bruce Covey
Argentine Air Chamber
WAC, Paterson, N. J.
September 11, 1939

Serafin F. Ortuzar
Argentine Inspection
WAC, Paterson, N. J.
September 11, 1939

Juan Jose Alessandretti
Argentine Purchasing
WAC, Paterson, N. J.
September 11, 1939

Harry B. Sidles (QB)
Peggy Gallimore
WAC, Paterson, N J.
September 11, 1939

BOEDY'S ALBUM

B. "Bernie" Schaffer
American Airlines
WAC, Paterson, N. J.
September 12, 1939

J. W. "Johnny" Young
North American Aviation
Paterson, N. J.
September 12, 1939

C. A. "Whitey" Whitesell
Eastern Air Lines
Camden, N. J.
September 13, 1939

Martina E. Hite
Transcontinental & Western Air
Newark-St. Louis
September 13, 1939

Hampton "Ham" Robb (EB-QB)
National Biscuit Co.
Pittsburgh-St. Louis
September 13, 1939

J. B. "Jack" LeClaire
Transcontinental & Western Air
Newark-Columbus
September 13, 1939

M. C. "MC" Williams
Transcontinental & Western Air
Columbus-St. Louis
September 13, 1939

E. V. "Ed" Pettis (QB)
Civil Aeronautics Authority
St. Louis, Mo.
September 14, 1939

W. S. "Bill" Cockrell
Civil Aeronautics Authority
St. Louis, Mo.
September 14, 1939

Garrett C. Covington
McDonnell Aircraft Corp.
St. Louis, Mo.
September 14, 1939

L. H. "Lou" Ritter
McDonnell Aircraft Corp.
St. Louis, Mo.
September 14, 1939

T. N. "Ted" Hagerman
Transcontinental & Western Air
St. Louis, Mo.
September 14, 1939

V. L. "Vic" Hoganson (QB)
Chicago & Southern
St. Louis-Chicago
September 14, 1939

Earl C. Ewing
Howard Aircraft
Chicago, Ill.
September 15, 1939

Elmer F. Mangold
Howard Aircraft
Chicago, Ill.
September 15, 1939

Doris Scott
American Airlines
Chicago-Newark
September 15, 1939

Oasis. Going to **Hong Kong** last January was the most exciting experience since the Berlin air lift. Just as Berlin is an oasis in Russian-controlled East Germany, Hong Kong is a British oasis in Red China.

The newspapers were carrying stories about evacuation of the American colony. The "experts" were saying that Hong Kong's days were numbered. The Chinese Reds might move in "any day." My wife and I got plenty of advice about staying away from such a trouble spot—we might get trapped by the Reds.

Yet the British Embassy gave us visas with almost record speed and the British civil air attache, **Christopher Clarkson,** sent a letter ahead to the director of civil aviation at Hong Kong that I was coming out.

To top off the confusion I ran into **Art Stewart** of TWA in Honolulu just as he was arriving back from a swing around the Far East. "Everything may blow up at any minute out there," Art said. "Go direct from Manila to Calcutta. Stay out of Hong Kong, Singapore and Bangkok."

Time to Go. If things were that bad out there, I said to myself, it's high time I got there to see for myself. So off we went to the Philippines where we spent ten days. One day in Manila I got a cable from **Mike Kendall,** Hong Kong manager for Philippine Air Lines, asking if a certain date would be satisfactory for a reception he wanted to give in my honor at the Hong Kong Hotel.

If the Chinese Reds were about to take over Hong Kong any day, how could those people be putting on receptions for visitors, I asked? And if everybody was being evacuated from the city, whom could they get to attend a reception? But I had never been to Hong Kong, so who was I to upset any plans? I cabled back okey. I never turn down invitations to receptions even when they're for me.

Early one morning my wife and I checked out of the Manila Hotel and headed for the airport and a PAL DC-6. With us was **Ken Macker,** formerly of TWA, who had just joined PAL as director of public relations. It was his first trip to Hong Kong, too. The plane was well filled up, mostly with Chinese. Off we went on the two hour and fifty minute hop across the South China Sea to that little bit of real estate which Britain claims as a Crown Colony on the coast of China.

Cockpit View. I'll make no bones about it. I was more excited about going to Hong Kong than almost any trip I had ever made. All I knew of China was a brief trip to Shanghai and Nanking back in 1947. The Korean war was going rather badly at the moment. There was a widespread feeling that we would be seeing Hong Kong for the last time under British control, that it, along with all of Southeast Asia, was destined to fall into the hands, for a while at least, of the mass of Chinese Reds.

I was in the cockpit as we approached the China coastline. At first there were a few small islands scattered about, then the main island of Hong Kong came into view, surrounded by hills of other islands and the mainland. It was high overcast but visibility okey.

Landing at Hong Kong is about as tricky as you'll find anywhere in the world, especially with large aircraft. Once you get to a certain point in the approach you are committed. The harbor has a limited area, providing ample flexibility in approach under best conditions, but strictly limited in overcast conditions.

Our DC-6 flew the precise pattern, entering the harbor with the city and island of Hong Kong on the left and I was surprised by the large number of attractive white stone homes and large apartment houses covering the hillside. The business section was jammed with all sorts of large structures and the harbor seemed to be teeming with ships of all sizes and description. A city of two million in such a picturesque setting makes quite an impression from the air.

✣ ✣ ✣

Double-Deckers. A DC-6 doesn't give you more than a few fleeting glimpses but I tried to take in the whole panorama of city and hills and irregular harbor, and I quickly spotted the airport which was along the water on the mainland side directly across from Hong Kong proper. It is in the area known as **Kowloon,** part of the British Colony. I was told that China was just over the hills a few miles away.

We made a wide circle in the harbor and descended and the first thing I saw that struck my attention as we got

lower were the big red double-deck buses on the streets just like you see in London. At that moment I realized that Hong Kong was not another Shanghai, that this was truly a British colony.

That DC-6 landed as gently as a helicopter and in just about the same space. Believe it or not, but the runway at Kai Tak Airport is only 1800 yards, or 3600 feet. Yet we had lots of room to spare and the captain didn't even use the reversible propellers. I think even the Douglas engineers would be impressed by the way PAL pilots land the DC-6 at Hong Kong. It's a tight field. You can't change your mind half way down. But because it's tight, the airport has had an excellent safety record. Follow the rules and you'll do fine.

In quick order we were out on the ground. Manila had been hot and humid but Hong Kong was delightfully cool. British immigration was simple and fast. So was customs. Mike Kendall was on hand with his attractive Honolulu-born wife **Betty.** So was **Walter Nolloth** of PAL, long-time resident of Hong Kong who knows everything there is to know about the place.

✣ ✣ ✣

Small World. But the big surprise was that just ahead of us going through customs was **Amos Culbert,** v.p. of Northwest Airlines, and his wife **Dot,** and **Don King,** NWA vice president for the Orient. They beat us on the ground by a couple of minutes, having come from Formosa. As they say, it's a small world.

Driving from the wooden barracks that serve as the passenger terminal to our hotel in Kowloon we passed the 71 transport planes once owned by China National Airways Corp. and Central Air Transport Corp. and now claimed by both Chinese Reds and Nationalists. Many are painted black, many have had their tails blasted open by sabotage, and there they sit unused and deteriorating. A sad sight. **Gen. Claire Chennault** has been trying to get 40 of these ships, so far unsuccessfully.

I've bumped into the Iron Curtain in the Arctic in far northern Norway, in Finland, Germany, Vienna and Korea. Here was the Iron Curtain again, just a few miles away. But just a few hundred feet away was the flag of Red China flying over the barracks housing some 300 Red mechanics who were guarding the transport planes along with an equal number of Nationalists. In this little oasis on the Chinese coast British law and order still predominates. A few miles can still make a lot of difference.

"Hands off" FLYING SAVES LIVES!

Pilot down! Another job for the Navy's famed air-sea rescue team. With the Piasecki HUP helicopter . . . equipped for "hands off" (automatic) flying . . . the Navy goes into action.

► The HUP is hovering while automatically stabilized by the Sperry A-12 Gyropilot*. Automatic stabilization greatly facilitates hovering over a target, as adjustments are then required only to correct for changes in wind drift.

► *For the helicopter pilot* . . . "Hands off" flying reduces pilot fatigue by freeing him from "flying" constantly with both hands and feet. He is free to concentrate on navigation, communications, rescue and submarine search duties while the automatic pilot takes over.

► *For the Navy* . . . Through the use of the Gyropilot, the HUP has full automatic stabilization in yaw, pitch and roll—the ultimate aim in the rotary wing field. Thus, military uses of the helicopter are almost limitless.

► On all missions, the Gyropilot greatly improves the ability of the helicopter to fly in reduced visibility, to maneuver automatically on take-offs and landings and to make automatically stabilized instrument landings through low weather ceilings.

*T. M., REG. U. S. PAT. OFF.

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(Continued from opposite page 3)

Flight Simulators: Orders have been placed by Air Force for flight simulators for Convair B-36, Boeing B-47, B-50D and C-97, Douglas C-124 and North American F-86D. Curtiss-Wright will construct simulators for B-36, C-97, B-50 and C-124; Link Aviation for B-47, and North American Aviation and Engineering and Research Corp. for F-86.

Starting Jets: Korean jet pilots are using a new engine starting system, lining one plane up behind the other and letting the exhaust of the first start the second. USAF says the idea may also be tried in cold regions where normal starters are not efficient.

Douglas Missile: A supersonic guided missile which can be directed toward an enemy plane and exploded on contact has been developed by Douglas Aircraft Co.

RB-36 Tests: More than 1,500 hours of flying time have been put on a Consolidated Vultee RB-36 since March, 1950. The plane is a reconnaissance version of the intercontinental bomber.

Tie-Down Fitting: A quick-locking tie-down fitting for aircraft chairs and litters has been developed by Adams-Rite Manufacturing Co., Glendale, Calif. Device has jaws which clamp together to lock chair to floor.

MILITARY

Wolfe Retiring: Lt. Gen. **K. B. Wolfe,** Deputy Chief of Staff, Materiel, will retire June 30 after 33 years' service. No successor named yet.

Youngstown Jet Base: House Armed Services Committee okayed Air Force plan to spend $7 million expanding Youngstown, O., Municipal Airport so it will accommodate jet interceptors. No military air base exists there now.

Local Purchase Branch: **Bernard M. Hanson** will be head of the newly-established local purchase branch at the Los Angeles Office of the Western Air Procurement District. The unit will handle utilities, contractural maintenance and aircraft repair, gas and oil purchases and buying of other items not normally available in USAF channels.

Texas Clinic: Armed Forces will conduct another joint procurement clinic to line up subcontractors at Will Rogers Coliseum, Fort Worth, June 25-30.

AIRLINES

RAL-Wiggins Merger: Robinson Airlines and Wiggins Airways submitted to CAB a joint letter of intent to merge. Action followed CAB's informal order to Wiggins that it must sell to RAL or its certificate wouldn't be renewed (News Issue, June 4). RAL, which will be the surviving local service carrier, will buy assets and routes of Wiggins' airlines division, thus gaining access to Boston and other New England cities. Purchase price hasn't been announced.

NAL Daylight Coach: One-year approval of National Airlines' proposal to fly daylight DC-6 coach New York-Miami was recommended by CAB Examiner **R. V. Radcliffe.** CAB blocked the service last August pending investigation.

NWA Elects Judd: **Frank C. Judd** has been elected vice president-operations of Northwest Airlines. He has been acting vice president for past two months and formerly was western regional vice president.

AA Coach Approved: American Airlines' new New York-Dallas-Los Angeles DC-6 coach service started June 3 when CAB permitted the tariff to become effective without suspension action. Service is in addition to AA's New York-Chicago-Los Angeles coach. There's no action yet on TWA proposal for New York-St. Louis-Los Angeles Connie coach, or on Eastern's request for industry-CAB meeting to discuss added coach proposals. EAL says new services might affect first-class operations.

PAL Dispute Settled: Col. **Andres Soriano,** president of Philippine Airlines, has signed one-year contract and has assumed full charge of management and direction of operations of the airline. Soriano and all other officers had submitted resignations because of "undue interference" by government members of board of directors in functions of management.

Chicago Shuttle Opens: Midway Airlines on June 1 opened air taxi service between airports in Chicago area, believed to be first scheduled operation of its kind. Company has CAB authorization for lightplane passenger shuttles between Midway Airport, on one hand, and Meigs Field, Sky Harbor Airport and O'Hare International, on the other, and between Meigs and O'Hare. Service to O'Hare isn't planned until airline starts to use the field fully.

Colonial Case Postponed: CAB hearing on investigation of Colonial Airlines and some of its officers has been postponed to June 18, at request of airline's lawyers and CAB enforcement counsel.

RAL Would Test Helicopter: Routes and facilities of Robinson Airlines are suited to testing needs for simulated airline operation of passenger type helicopters, **Robert E. Peach,** RAL executive vice president, has told Prototype Aircraft Advisory Committee. RAL's routes are in highly populated areas, average flight length is 30 minutes, and it is centrally located with regard to helicopter manufacturers and government agencies involved in any testing operations, he said.

105 C-46's Used: Scheduled and non-scheduled air carriers now have 105 Curtiss C-46's on lease from Air Force. Slick Airways has largest number (15), followed by Pan American World Airways and Resort Airlines with nine each.

CIVIL AERONAUTICS BOARD

Airnews Investigation: Airnews Inc., certificated all-cargo carrier, has been directed to show cause why its certificate should not be suspended or revoked for alleged non-compliance with terms of the route award. Granted two segments from San Antonio to Corpus Christi and Brownsville two years ago, Airnews was to have provided scheduled truck service to not less than 75% of truck-stop points named in its application. Braniff Airways claimed Airnews hadn't complied with these terms, and CAB's enforcement office cited certificate violations to Board. Company has until June 30 to answer show cause order.

Alaskan Study Asked: President Truman has directed CAB to make immediate study of Alaska's long-range air transport needs. Request was made in connection with recent U. S.-Alaska Service Case decision, which President revised to include Alaska Airlines for Fairbanks to Seattle/Portland operation. In same case, Pacific Northern received Anchorage to Seattle/Portland. CAB will ask study delay until effects of these operations are known.

Actions

• **Flying Tiger Line** granted exemption to transport Youth Argosy members to and from Europe this summer as CAB

further relaxes supposedly-firm 1951 trans-Atlantic charter policy. Exemption permits Flying Tiger to operate maximum of 13 round-trip flights prior to September 30.

• **Air Line Pilots Association** turned down on motion for broadening issues in reopened PAA/AOA Merger Case. ALPA wanted consideration of pilot employe protective conditions and possible extension of presently-fixed protective conditions beyond July 25, 1952. But CAB said new issues are "unrelated" and would "unduly lengthen the proceeding."

• **Pearson-Alaska,** Burbank, Calif., and All-American Airways, Miami, Fla., turned down tentatively on individual exemption applications, as CAB resumed an undisputed method of dealing with non-scheduled airlines.

Applications and Petitions

• **Eastern Airlines** filed third petition for reconsideration of decision in Southern Service to West Case in which interchanges were authorized in lieu of route extensions requested by Eastern and others.

• **Pan American World Airways, W. R. Grace & Co.,** and other parties to National/Panagra interchange case filed briefs on CAB's order tentatively approving the interchange. Grace charged Pan Am with "illegal restraint of competition" and in turn was accused of attempting "steamship domination of an airline." Oral argument will be heard June 19 in Washington.

• **Braniff Airways** asked that Pioneer Air Lines forfeit its Austin-Houston route unless service is inaugurated at intermediate points Temple and Bryan, Texas. Points were added to PAL's segment last September when CAB renewed local service line's certificate for five years.

• **Trans-Texas Airways and Pioneer Air Lines** applied for expansion of local service routes to include generally all points now served and proposed to be served by Central Airlines. In addition, TTA applied for eastbound expansion of its routes to New Orleans and westbound expansion to Los Angeles.

Examiners Reports

• **Eastern Air Lines and National Airlines** have been recommended for an interchange service between Miami/Jacksonville and Houston/San Antonio by Examiners Francis W. Brown and James S. Keith. Service would be via New Orleans with EAL operating one daily Lockheed Constellation flight between Miami, Tampa, New Orleans, and Houston and NAL operating a daily Douglas DC-6 flight over the same route extended to San Antonio. Also, EAL would operate a daily DC-3 flight between Jacksonville and San Antonio.

• **Chicago and Southern Air Lines** recommended for three-year authority to serve Maracaibo, Venezuela, as intermediate on Latin American certificate between Caracas and Curacao by Examiner Curtis C. Henderson.

CIVIL AVIATION

Mobilization Line-Up: Civil aviation mobilization divisions under Gen. **Donald Connolly,** special assistant to Undersecretary of Commerce **D. W. Rentzel,** will be headed as follows: **George Haddaway,** editor of *Flight,* chief of general aviation operations division; function of airports and airways division delegated to CAA, with Administrator **Charles Horne** as chief; **George Gardner,** president of Northeast Airlines, chief of air transport division. **Charles Cary,** executive secretary of Air Coordinating Committee, will be Connolly's deputy director. He'll also continue to handle his ACC duties, at least for present.

Civil Schools Train for NATO: Four Air Force basic flight training schools operated under civilian contract will train North Atlantic Treaty Organization pilots along with AF cadets. Schools are Greenville AFB, Miss., operated by Graham Aviation Co., Butler, Pa.; Columbus AFB, Miss., California Eastern Airways; Spence Field, Moultrie, Ga., Hawthorne Flying Service, Charleston, S. C.; Bartow, Fla., Garner Aviation Co., Richmond, Va.

Balfour Re-elected: **Maxwell W. Balfour,** Tulsa, Okla., has been elected president of Aeronautical Training Society for the fifth time. Other officers: **E. Merritt Anderson,** Milwaukee, vice president; **Wayne Weishaar,** Washington, D. C., secretary-treasurer. Directors include Anderson, Balfour and the following: **Hugh Copeland,** Miami; **Hal S. Darr,** Chicago and Denver; **Millard Davis,** Atlanta; **Beverly E. Howard,** Charleston; **Frank Hulse,** Birmingham; **Albert I. Lodwick,** Lakeland, Fla.; **Clarence E. Page,** Oklahoma City; **Oliver L. Parks,** E. St. Louis; **W. N. Raymond,** Orlando; **Harry White,** Palo Alto.

Mrs. Beech Honored: Women's National Aeronautical Association named **Olive Ann Beech,** president of Beech Aircraft Corp., as "Woman of the Year in Aviation."

NAA Postpones Convention: National Aeronautic Association convention, originally set for June 3-6 in Chicago, was postponed, with date to be announced later. Decision of **Louis E. Leverone,** NAA president, to retire, was principal reason for postponement. Nominating committee, headed by **William P. MacCracken, Jr.,** has been named to consider successor.

NAA Insurance Plan: Travel and pilot accident insurance plan is being offered to its members by National Aeronautics Association. Coverage "A" ($1 per thousand) is for members traveling as fare-paying passengers on public transport, including scheduled airlines; "B" ($2 per thousand) covers passenger aboard private, business or government plane except combat aircraft; "C" ($4 per thousand) covers all previously-named transport plus coverage as pilot. First two plans offer up to $25,000 coverage with $1,250 medical expenses; last one is $10,000 and $500.

LABOR

UAL Pilot Dispute: Meetings between United Air Lines and its pilots on a new contract broke off and no date was set for resumption of negotiations. National Mediation Board has again offered its services to attempt to settle the dispute. Involved are wages and working conditions for flying DC-6B, as well as mileage limitation in new contract.

UAC Raise: Cost-of-living increase for United Aircraft Corp.'s salaried employes has been approved by Wage Stabilization Board. Plan provides 8c per hr. boost for Mar. 1-May 31, 1951, plus 3c for Dec. 1, 1950 to Feb. 28, 1951. About 9,500 employes are affected. Similar plan is in effect for hourly-rated employes.

FINANCIAL

Airlines

Northeast Airlines reported $418,279 profit for 1950 against $25,523 profit in 1949. Included in 1950 was non-recurring gain of $246,700 from sale of three DC-4's and parts.

Bonanza Airlines had $105,128 net loss in 1950, first full year of operation.

Trans-Texas Airways reported $94,549 net for 1950 against 1949 loss of $156,370.

West Coast Airlines first quarter profit $12,400 against $44,502 loss in same 1950 period.

Manufacturing

Northrop Aircraft reported $2,215,000 net on $60,500,000 sales for nine months ended Apr. 30.

Bell Aircraft Corp. first quarter profit $364,483 against $179,493 net in same 1950 period. Backlog is now $225,000,000.

AROUND THE WORLD

Commercial Comet Flight: First commercial flight with deHavilland jet Comet has been completed by British Overseas Airways Corporation. Plane, which goes into service on Middle East routes later this year, flew London-Cairo in 5 hrs. 22 min. with 23 passengers.

Civil Air Chief: **Lord Ogmore,** formerly with Commonwealth Relations Office, has been appointed Britain's Minister of Civil Aviation, succeeding **Lord Pakenham,** who becomes First Lord of the Admiralty.

Surely your air line can use this added revenue!

HERTZ . . . and only HERTZ can offer all the advantages of the

PLANE-AUTO TRAVEL PLAN

Driving their own cars, traveling between cities, Americans covered 570 billion passenger miles during 1949! A large number of these drove long distances not because they wished to, but simply because they wanted and needed cars when they reached their destinations.

In a short time thousands of car owners have been diverted to plane travel from long distance driving by the Plane-Auto Travel Plan . . . which is a plan of co-operation by the Hertz Driv-Ur-Self System and air lines. And no wonder, when you realize that now travelers can reserve a new car from Hertz before they leave home in over 450 cities throughout the United States, Hawaii, Cuba, Great Britain and Canada, and be sure that the car will meet them at the airport, if desired, filled with gas and oil, properly insured, all ready to go! *And at surprising low rates.*

Hertz . . . and *only Hertz* . . . tells the traveling public the advantages of the Plane-Auto Travel Plan thru national advertising in such leading magazines as the Saturday Evening Post, Life, Look, Holiday, Time, Newsweek, and U. S. News & World Report.

Are you telling your customers about this great traffic-building plan? At every counter, have you a counter display? If not, send for them now, they are free, they will help you to sell your passengers, and render a worth-while service. That the great traveling public wants this service has been proved . . . proved by ever-increasing interest, ever-increasing use of the Plane-Auto Travel Plan.

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So successful has the Plane-Auto Travel Plan proved that Hertz has opened a score of auxiliary stations at airports and will open others as rapidly as required. Remember, you can reserve cars from Hertz—and *only* Hertz—in more than 450 cities including virtually all pleasure resort areas, throughout the U. S., Hawaii, Cuba, Great Britain and Canada! So, to increase your air line revenue, advertise, promote, sell the Plane-Auto Travel Plan. Write for further information, or materials you may need. Get your share of this growing business.

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ROBINSON AIRLINES links New York State's Southern Tier communities—Binghamton, Endicott, Johnson City, Elmira, Corning, Ithaca and Sampson Air Force Base—with Albany, Schenectady, Troy, Syracuse, Rochester, Buffalo-Niagara Falls, Utica-Rome and New York-Newark. Under the able guidance of Robert (Bob) E. Peach, its Executive Vice President and General Manager, this regional airline has greatly reduced travel time between the major cities of the Empire State . . . it provides excellent commuter service and connections to any point in the world. Robinson Airlines maintains passenger, air mail and air cargo service and has won distinguished awards for outstanding achievements in aviation.

All Robinson Airlines' planes are lubricated with Texaco Aircraft Engine Oil *exclusively.*

"ASSURES EFFICIENT PERFORMANCE AND KEEPS COSTS DOWN"

That's what Robinson Airlines says about Texaco Aircraft Engine Oil and Engineering Service

Robinson Airlines' modernized DC-3 transports speed over the "Route of the Air Chiefs" in 14 daily flights. Their powerful Wright G-202 engines are lubricated with *Texaco Aircraft Engine Oil* exclusively because "we insist on top quality—both in lubricants and in engineering service."

Here, as on leading airlines across the country, *Texaco Aircraft Engine Oil* assures the clean engine operation that means top efficiency and low maintenance costs. These benefits, and the quality that makes them possible, are proved by this fact—

More revenue airline miles in the U. S. are flown with Texaco Aircraft Engine Oil than with any other brand

In addition, Texaco Lubrication Engineering Service puts practical aviation know-how to work—helps Robinson Airlines maintain an enviable record of efficiency and economy. This is a service that can—and often does—go far beyond the immediate problems of lubrication.

A Texaco Aviation Representative will gladly explain what Texaco Aviation Products and Service can mean to you—in terms of more efficient operation and lower costs. Just call the nearest of the more than 2,000 Texaco Distributing Plants in the 48 States, or write The Texas Company, *Aviation Division,* 135 East 42nd St., New York 17, N. Y.

TEXACO

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FOR THE AVIATION INDUSTRY

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American Aviation

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a LOOK at the WEEK

Several moves to obtain higher status for National Production Authority's aircraft division have failed. Persons close to the situation say bitterly that certain old-line Commerce Dept. officials in NPA want to keep their "foot on the neck" of aviation and that it'll be a tough pull to try to change the division to bureau level.

•

Designs submitted for Air Force freighter with 25,000-lb. payload have been analyzed at Wright-Patterson AFB and forwarded to Washington for final decision.

•

United Auto Workers-CIO aircraft officials plan meetings during next few months to determine demands they'll make on aircraft companies whose contracts expire soon.

•

Defense Dept. wants 70-group ceiling removed from Air Force. No definite lid would be imposed by law, and AF would be allowed to buy as many planes and missiles as it needs.

•

Defense Production Act, which expires June 30, will be extended, at least temporarily, with no increase in control powers.

•

There's nothing in writing yet, but National Production Authority will evidently okay leaving transport planes on Controlled Materials Plan "B" list but giving them a single allocation symbol (News Section, June 11).

•

Chances for aviation legislation at this session of Congress are now slim, with one exception—separation of domestic mail pay from subsidy.

•

Airlines have invested between $600 and $700 million in property and equipment (85% in planes and accessories) in five years since World War II. Next two years' capital expenditures will equal or exceed annual rate of 1946-50 period.

•

Real reason behind cut in funds for Air Navigation and Development Board's long range program on aids to navigation is withdrawal of military support (see adjoining column). Navy, for example, is eager to develop its own aids, and now has the money, through defense appropriations, to do so.

Productivity Raises Affect Industry

Wage Stabilization Board approved [illegible]c per hr. productivity increase for United Auto Workers-CIO will affect aircraft companies having such wage agreements, but increases won't be due for several months. Some, but not all, airframe and engine makers have such clauses in their UAW contracts.

WSB, in okaying boosts, said (1) they must be contained in contracts signed before Jan. 26, and (2) manufacturers must guarantee that they won't ask price hikes to compensate for the increases.

All aircraft contracts were signed [illegible] and have several months to go before increases are due. On second point, most products made by industry are sold to government and are exempt from price ceilings if they're strictly military. This may mean that some special agreement will have to be made between government and companies granting increases.

Revised DPA Line-Up

Realignment of duties among top officials of Defense Production Administration, and appointment of three new deputy administrators, all of whom will be dealing with aviation matters, have been ordered by Acting DPA Administrator Edwin T. Gibson.

New deputy administrators are: W. W. Watts, in charge of all DPA production and procurement activities; Charles E. Wampler, program and requirements; Nathaniel Knowles, staff service. Continuing as deputies are Maj. Gen. Thomas F. Farrell, resources expansion; John C. Pritchard, small business.

Production and Procurement: Watts, on leave from Radio Corporation of America, directs work of six interagency boards and committees: Production Executive Committee (Watts as chairman), Aircraft Production Board (Watts acting chairman), Electronics Production Board (Edmund T. Morris, on leave from Westinghouse), Procurement Policy Committee (Watts acting chairman), Central Committee for Regional Defense Mobilization Committees (E. F. Bertrand), and Critical Areas Committee (Ralph R. Kaul).

Program and Requirements: Wampler, on leave from American Telephone and Telegraph, heads the DPA Requirements Committee, "the top government body in the defense production effort for the determination of material requirements and the allocation of materials to the various segments of the military and civilian economy." Under him are the Program Adjustment Committee, headed by M. L. Anshen, and Requirements Division, headed by George H. Lilygren.

Staff Service: Knowles supervises Materials Review Division and Conservation Division, and acts as chairman of Vital Materials Coordinating Committee. Foreign Activities Division will report to him.

ANDB Experts Resign

Following a 50% cut in research and development funds for the next fiscal year, four of the six top technical men on Air Navigation and Development Board, including Dr. Douglas Ewing, director of development, have resigned.

The [illegible] primarily [illegible] long-range [illegible] on the [illegible] of navigation and traffic control, and ANDB will now devote its time to [illegible] mediate [illegible] systems [illegible] existing equipment in-

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for National Airlines' Daylight DC-6 Coach proposal. Carriers contend NAL's Miami-New York service would spread to other markets with general reduction in fares likely result.

Actions

• **Bonanza Air Lines** directed to show cause why it shouldn't accept back mail pay award of $98,000 and a $62,000 annual hike for a "future" period beginning with May 1, 1951. Back pay is for Dec. 19, 1949 through Apr. 30, 1951, and would bring total for period to $780,000. Future rates are based on 60c a mile with annual estimate set at $520,000.

• **Flying Tiger Line** granted exemption to operate one charter flight from San Francisco to Copenhagen and return from London under contract with a University of California students group.

Examiners Reports

• **Trans World Airlines'** request to suspend international service at Philadelphia should be denied and similar request of Pan American World Airways approved, according to recommendation of Examiner Herbert K. Bryan. Examiner found that one daily DC-3 flight between Philadelphia and New York integrated with trans-Atlantic schedules would meet immediate international traffic needs of the city. He recommended continued service by TWA because it has DC-3 equipment.

CAB Calendar

June 18—Hearing in Big Four Mail Rate and Efficiency Investigation. Washington. (Docket 2849 et al.).

June 18—Hearing in Investigation of Colonial Airlines and its officers. New York, N. Y. (Docket 4907).

June 19—Oral argument on exceptions and petitions for reconsideration in Pan American-Grace/National Airlines Interchange Case. Washington. (Docket 3500 et al.).

MILITARY

Admiral's Blast: Rear Admiral **R. A. Ofstie,** commander of Aircraft Division Five in the Korean area, claims too much emphasis is being placed on strategic bombing. He says most funds now planned for strategic bombers should be used for tactical planes. USAF officials won't comment.

TTAF Head: Maj. Gen. **Charles C. Chauncey** has been named commanding general of the newly organized Technical Training Air Force, which will set up headquarters near Biloxi, Miss., by mid-summer.

CONGRESS

NACA Funds Approved: House passed and sent to Senate H. R. 1179, authorizing $13,156,000 for development and expansion of five flight research laboratories under direction of National Advisory Committee for Aeronautics. Authorizations involve prospective expenditures at Ames Laboratory, Moffett Field, Calif.; Edwards Air Force Base, Muroc, Calif.; Lewis Flight Propulsion Laboratory, Cleveland, and Langley Aeronautical Laboratory, Langley Field, Va.

Foreign Carrier Permits: Issuance of foreign contract air carrier permits would be transferred from Secretary of Commerce to CAB under legislation (S. 1588) introduced by Sen. **Edwin C. Johnson** (D., Colo.). Originally this was considered an administrative function dealing largely with safety, but in recent years, with contract carriage on the increase, both CAA and CAB have agreed that operations involved are more economic in nature.

Insurance Bill Amended: Aviation War Risk Insurance bill (S. 435) has been passed by Senate and House and sent to White House with amendment naming class of companies which may participate in writing this government-guaranteed insurance on airline operations into danger zones. Classes named were "any mutual or stock insurance company, reciprocal insurance association, and any group or association authorized to do an aviation insurance business in any state of the United States."

CIVIL AVIATION

Morrow Named: **Cole H. Morrow,** Racine, Wis., has been elected chairman of the board of Corporation Aircraft Owners Association for the ensuing year, succeeding **William H. Belden,** who has headed the organization since it was founded in 1946. Morrow has been head of CAOA's technical committee.

NATC Headquarters: New headquarters have been opened by National Air Taxi Conference, with National Aviation Trades Association, at 1346 Connecticut Ave., Washington, D. C. **Evelyn Waters** has assumed duties as NATC secretary. **Charles A. Parker,** NATA executive director, will oversee taxi activities on temporary basis until further progress on the Conference is made.

New FAI Records: Federation Aeronautique Internationale recognized as world records the flight of **Jacqueline Cochran** in a North American F-51 at 464.374 mph near 25,000 ft., and light plane altitude mark of 27,152 ft. set by Mrs. **Ana Louisa Branger,** in a Piper Super Cub. Miss Cochran's flight established first officially recognized maximum speed record at high altitude, while Mrs. Branger's bettered by 1,601 ft. the previous world mark for landplanes weighing less than 1,100 lbs. fully loaded.

Ross Appointed: **Morwick Ross** has been appointed executive assistant to CAA Administrator **Charles F. Horne.** Position has been open since resignation of **Edward M. Sturhahn** several months ago. Ross was formerly assistant to Assistant Secretary of Commerce **T. W. S. Davis.**

FINANCIAL

Airlines

Philippine Air Lines had $291,211 profit in first four months of 1951.

Mid-Continent Airlines profit for April totaled $4,366 against $36,665 profit in same 1950 month. Net for first four months was $35,982 against $76,150 in same period last year.

LABOR

ALSSA Wants Representation: Airline Stewards and Stewardesses Association wants a voice in CAA and CAB accident investigations. Union passed resolution providing that representative of the flight attendants would be authorized to participate in all investigations on commercial type aircraft. Pilots now have this authority. ALSSA also plans to seek affiliation with American Federation of Labor.

COMING UP

June 18-22—American Society for Testing Materials annual meeting, Atlantic City, N. J.

June 21-22—Local Air Service 2nd annual seminar, Purdue University, Ind.

June 27-28—I.A.S. annual summer meeting, Western Hqs. Building, Los Angeles.

June 27-29—Aviation Distributors and Manufacturers Association, mid-year meeting of officers and directors, The Homestead, Hot Springs, Va.

June 28-30—Institute of Navigation annual meeting, Hotel New Yorker and Kings Point, N. Y.

International

June 15-July 1—Paris International Aircraft Exhibition 1951, Grand Palais and Paris airport.

June 23—British National Air Races 1951, Hatfield Aerodrome, Hertfordshire, Eng.